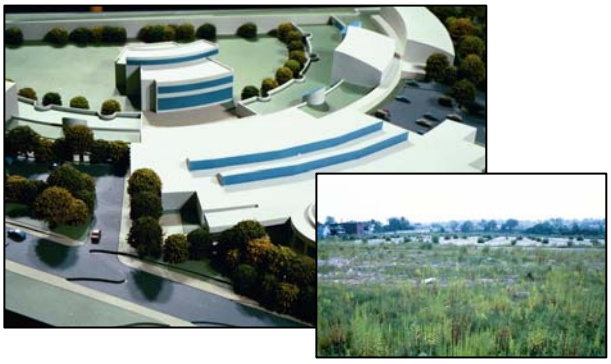
# *IFA Request for Qualifications – Remediation Services*



Prepared For:
IFA Request for Qualifications – Remediation Services
Indiana Finance Authority
c/o Indiana Brownfields Program
Attn: Sara Westrick Corbin
100 North Senate Avenue, Room 1275
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November 3, 2006


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# Section 1
# General Information

Hull & Associates (Hull) and Delta Environmental Consultants, Inc. (Delta) have the right team to support the Indiana Finance Authority (IFA) and its desire to provide technical services for sites eligible for brownfields Petroleum Remediation Grant (PRG) funding. We are pleased to present our response to the Request for Qualifications (RFQ) and trust that the IFA will find that our team is uniquely qualified to assist the IFA and local communities with PRG-related project needs.

It is Hull's and Delta's focus to first understand our clients' environmental problems and project goals, then develop and provide timely, cost-effective services that meet those needs. This is accomplished through frequent and open communication with our clients on project issues. Our project managers consider effective and continual communication with our clients to be a prime responsibility. Our professionals pride themselves in responding quickly and efficiently to our clients' needs. Team members listen to our clients; we ask questions, study the problem, and review several possible options before recommending a particular course of action. We keep our stakeholders involved in every step of a project, seeking their input and suggestions and incorporating their concerns along the way.

We pride in ourselves on not only having exceptional technical expertise to develop custom-tailored solutions for our clients, but also having the sensitivity to make sure that we perform and present our work in a manner compatible with our client's culture and expectations. We specialize in providing innovative, yet practical, environmental assessment and remediation services, compliance-related services, and operation and maintenance services. We are a solution-oriented organization that provides safe, timely, cost-efficient, and risk-based solutions that provide successful solutions. The key to our success is in the planning and skilled management of time, resources, and budget.

## 1.1 Contact Information

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## 1.2 History of Firms

In 2001, Hull & Associates (Hull) and Delta Environmental Consultants, Inc. (Delta) entered into a Memorandum of Understanding (MOU) to provide comprehensive environmental services for a major international petroleum client. The basis of the MOU formed an alliance designed to create additional value for the client through an expanded list of service offerings and service delivery synergies. The partnership is transparent to select clients and in no small part enables the firms to more effectively serve clients on a nation-wide basis. The alignment of mission, culture, core values, safety focus, and commitment to delivering value to our clients forms a solid platform from which we can jointly provide a powerful technical team that delivers a message – that our whole is truly greater than the sum of our parts.

### Hull & Associates, Inc.

Hull & Associates, Inc. (Hull) is a professional engineering firm that employs professionals in the areas of engineering, science and strategic planning. Providing services throughout the Midwest and other strategic locations, Hull is committed to anticipating today's evolving market and political developments, and utilizing the best techniques to provide our clients with services that are second to none. Our creative ideas and breadth of services allow us to solve our clients' complex issues and add value to their business initiatives. Hull takes pride in being recognized by ENR as a top 500 design firm and by ZweigWhite as a Top 100 Hot Firm.

Both our industry and our community recognize us as a leader in addressing scientific, engineering and strategic planning issues. Hull's participation is prevalent in our communities and we have a strong presence in several professional associations in which we do business.

### Delta Environmental Consultants, Inc.

Delta Environmental Consultants, Inc. (Delta), a full service environmental consulting company, is privately held, 100% employee-owned and has more than 600 employees in 38 offices across the United States. International services are provided via the Inogen Environmental Alliance® - a global network of independent consultants committed to providing superior environmental consulting expertise, of which Delta is a founding member.

In order to focus more on our client service, Delta is organized into three divisions: the Industrial, Petroleum, and BP/Amoco Divisions. This allows each division the flexibility to be structured and resourced as needed in order to concentrate on the needs of its specific clients. Our staff includes environmental and chemical engineers, health and safety specialists, environmental management consultants, training and performance consultants, hydrogeologists, toxicologists, environmental scientists, and air specialists.

### Combined Strength

Team members and project leaders are empowered with the resources they need to assure that our service delivery model continues to deliver on expected results, as we have for many years. As a result we are able to offer our clients a nation-wide, proven, trusted, value-driven, and long-term business partner.

The collaborative effort between Hull and Delta can provide a dedicated team with the regulatory and technical experience to achieve successful urban revitalization. We bring a high degree of technical and regulatory expertise to focus on complex Brownfields projects. Strong, strategic project management and facilitation result in comprehensive strategic and technical solutions for our clients.

Both organizations hold safety as a core value in the operation of our businesses. Each company maintains and promotes its Health and Safety Program and its Quality Assurance/Quality Control Program through employee interaction, hands-on training programs, and enforcement. Our policy is a zero incident, zero defect policy. These policies are spread within the organization at training sessions, project meetings, management meetings, external audits, project site tailgate sessions, and performance reviews. The QA/QC Management Plan for the organizations incorporates tenets of the Total Quality Management approach, particularly the relentless pursuit of improvement in service and quality.

Our team consists of strong, dedicated individuals that are committed to adopting and applying themselves to the successful achievement of project objectives. Many of these professionals are well known and time-proven; many more are being drawn from other portions of our business to optimize our efforts on our client's behalf. As team members of the combined Hull and Delta organization, we are committed to harnessing the vision, passion, and horsepower of our two organizations to provide the Indiana Finance Authority the very best we have to offer.

## 1.3 Proposed Scope of Work

The agreement between Hull and Delta is structured so that the Indiana Finance Authority will contract directly with Hull. Hull and Delta have agreed to operate by a model that fully integrates teams, including both Hull and Delta employees, into one operational unit. The alliance between the firms creates a competitive advantage by leveraging the economies of scale, business efficiencies, expanded knowledge and skill base, and service area. Both firms have best-in-class safety cultures, strong business models, and outstanding technical employees. The two firms are well matched and complement each other. Hull and Delta are a strategic fit for our clients and we feel there is a long-term benefit to our relationship for both firms. Furthermore, we feel strongly that our relationship of working cooperatively to serve our clients as and where it makes the most sense for more than five years demonstrates that we can work as a seamless, cost-competitive, and results-oriented organization that will serve the Indiana Finance Authority and Indiana communities extremely well.

**Focused Approach**

As with any project, aggressive schedules must be met and costs must be managed. Our team performs targeted environmental investigations where appropriate, so our clients can make critical decisions early, rather than later. Integrating remediation into construction and beneficial reuse of materials is always considered. Hull and Delta can reduce these costs significantly, making the property more competitive with green space development.

**Liability Issues**

Our team provides the technical basis for its clients to negotiate site-specific agreements that protect against future liabilities; we are knowledgeable about the various instruments available, such as environmental insurance. We help clients seek protection under state and federal programs, including U.S. EPA's Memorandum of Agreement.

We do more than prescribe regulatory answers to cleaning up properties; we find creative and cost-effective solutions that benefit the project from start to finish.

**Professional Certifications**
Our team meets or exceeds the minimum requirements for certification in many state brownfield programs. We hold professional engineers licenses in 43 states across the U.S. (including Indiana), as well as the requisite state-specific licenses for brownfield work.

**Funding**
Hull has obtained grants and other sources of funding to help balance the costs of remediation with economic development. We have helped 12 communities obtain U.S. EPA brownfield grants in Region 5, and have served as the lead environmental consultant for implementation of U.S. EPA brownfield grant projects in 16 communities across the Midwest. This experience, which involves significant public outreach and contact with communities of all sizes, means that we have the personnel, techniques, and tools to work with local officials and other stakeholders to help them realize their goals of returning their brownfields to productive use.

**Our Reputation**
The volume of those who have sought our advice is representative of the respect we have gained in the field. We have been requested to speak before Governor's committees, business associations, and state and national conferences about brownfields policy and our successes.

Every brownfield redevelopment project is unique. Our team works with clients to identify environmental liabilities. Then we plan, manage, and successfully integrate pragmatic, environmentally sound solutions into our brownfield redevelopment projects.

## 1.4 Project Team

### Hull & Associates, Inc.

**Douglas G. Stuart, CHMM**
**Senior Project Manager**
Mr. Stuart is a Senior Project Manager with Hull and currently manages Hull's Indianapolis, Indiana office. He is a Certified Hazardous Materials Manager and has been involved with site assessment, risk evaluation, closure, and remediation projects at several hundred UST properties. During his employment at Hull, Mr. Stuart was employed as an in-house consultant on contract to a major U.S. petroleum marketer, where he managed corrective action projects at retail UST and oil terminal properties to balance cost, remediation, and reputation goals. Mr. Stuart currently manages projects pursuant to Indiana's Risk Integrated System of Closure and Indiana's Leaking Underground Storage Tank program. Mr. Stuart has also conducted projects in accordance with Ohio's Voluntary Action Program and U.S. EPA RCRA, and has experience in conducting ASTM Phase I investigations.

Doug holds a Bachelor of Science in Natural Resource Development and a Master of Science in Environmental Science from The Ohio State University.

**Brent Graves, PG**
**Senior Project Manager**
Brent Graves is a Professional Geologist with over 18 years of experience in environmental consulting. His responsibilities have included conducting hydrogeologic investigations for solid waste disposal facilities, petroleum UST facilities, industrial and manufacturing facilities, and for water supply availability. Other responsibilities have included preparing three-dimensional models of site stratigraphy, groundwater flow and contaminant transport modeling, and

evaluating and conducting statistical analyses on groundwater analytical results for solid waste disposal facilities.

Mr. Graves has a Bachelor of Science in Geology from Indiana University Purdue University Indianapolis.

**Kara A. Allison, APR**
**Government and Community Relations Practice Leader**
Kara Allison leads Hull's Government and Community Relations Practice where she specializes in media strategy, crisis communications and media training, as well as state and federal environmental policy and legislative issues. A journalism graduate of Ohio Wesleyan University, Ms. Allison has nearly 11 years experience in public and media relations. She is an accredited member of the Public Relations Society of America and a registered lobbyist in Indiana and Ohio.

Ms. Allison builds credibility with legislators, government officials, municipalities, community groups and reporters by helping them understand the various environmental issues associated with development projects. She routinely provides media counsel and shares her in-depth regulatory, legislative and program knowledge with staff and clients.

Ms. Allison is a former media relations coordinator for the Ohio Environmental Protection Agency. She is the author of several environmental articles and papers, has co-presented a national PRSA teleseminar, and serves on several professional boards and committees on behalf of Hull. Among other accomplishments, Ms. Allison received the 2001 George B. Garrett Professionalism Award, Ohio EPA's highest award for professional excellence.

## Delta Environmental Consultants, Inc.

**Edvins Joniskan**
**Senior Project Manager**
Edvins Joniskan is a Senior Environmental Project Manager for Delta Environmental Consultants, Inc. Mr. Joniskan maintains certification as a Licensed Professional Geologist in Indiana and has more than 16 years of experience, in part, as a regulator and as a project manager of remedial investigations and closures. His responsibilities include applying streamlined site investigation strategies, effective remedial solutions, and supervising resource allocations and project finances. In addition, he provides technical and regulatory support for a multi-million dollar multidisciplinary client, as well as, applies his extensive experience in developing and maintaining regulatory compliance initiatives.

While gaining experience as a state regulator, Mr. Joniskan ensured that all owners and operators of USTs comply with the requirements for reporting, investigating and cleaning up releases of petroleum and hazardous substances from UST systems pursuant to Indiana Code 13-23 and Indiana Administrative Code 329 IAC 9. He gained additional experience in integrating environmental risk management decisions while determining project closure alternatives during his tenure with the State of Indiana's Voluntary Remediation Program, which in turn, encouraged property redevelopment.

Mr. Joniskan gained additional project experience by supporting U.S. EPA-led investigations surrounding a municipal water supply by identifying types and concentrations of groundwater contaminants in vicinity of the well field capture zone which constituted approximately four

square miles. Contaminant concentrations, primarily industrial solvents, in water drawn from the impacted well field often exceeded maximum contaminant levels (MCLs). Mr. Joniskan provided input on sample network design and rationale for investigating all potential contaminant sources, worked alongside U.S. EPA representatives, and assisted in providing support for several alternatives to the groundwater contaminant presented to city officials.

**Jeff Kaestner**
**Senior Specialist**
Jeff Kaestner is a Senior Specialist for the BP Amoco Division of Delta Environmental Consultants, Inc. He has more than 12 years of practical experience in the environmental consulting field. He has provided consulting services for a wide range of environmental issues and client sectors. During his tenure at Delta his roles include Project Manager, Unit Manager, and his current role as Senior Specialist. His technical specialties include design, installation, operation & maintenance, and closure activities associated with remediation of petroleum hydrocarbons.

### Other Project Team Members

| Company | Name | Title |
|---|---|---|
| Hull & Associates, Inc. | J.P. Hogan, LPG | Project Manager |
| Hull & Associates, Inc. | Ryan France | Scientist II |
| Hull & Associates, Inc. | Jason Oland | Scientist II |
| Hull & Associates, Inc. | Sarah Webb | Hydrogeologist I |
| Hull & Associates, Inc. | Ryan Sievers | Technician I |
| Hull & Associates, Inc. | Casey McFall | Scientist I |
| Delta Environmental Consultants, Inc. | James Cuthbertson, PE | Senior Consultant |
| Delta Environmental Consultants, Inc. | William Pickard, LPG | Project Professional |
| Delta Environmental Consultants, Inc. | Chad Pitcher, CHMM | Project Manager |

## 1.5 Financial Stability and Strength

### Hull & Associates, Inc.

**Hull & Associates Inc. Financial Stability**
Hull & Associates Inc. is a privately held S Corporation and does not readily disclose financial information in detail. We do, however, make our basic financial health/stability known by using an accepted accounting review known as the "Z" score. A summary of this information is attached in Appendix D. Also, a copy of a letter from our corporate banker attesting to our strength and stability is provided in Appendix D.

### Delta Environmental Consultants, Inc.

A copy of Delta's Audited Financial Statement is included in Appendix E. Delta is a 100% ESOP firm. All employees of Delta participate in the company's ESOP. No individual employee currently owns more than 2% of the company's outstanding shares. Additional information on Delta's ESOP or business structure can be provided to IFA upon request.

## 1.6 Health and Safety Practices/Programs

Both organizations hold safety as a core value in the operation of our businesses. Each company maintains and promotes its Health and Safety Program and its Quality Assurance/Quality Control Program through employee interaction, hands-on training programs, and enforcement (zero incident - zero defect). These policies are spread within the organizations at training sessions, project meetings, management meetings, external audits, project site tailgate sessions, and performance reviews. The QA/QC Management Plan for the organizations incorporates tenets of the Total Quality Management approach, particularly the relentless pursuit of improvement in service and quality.

### Hull & Associates, Inc.

At Hull, safety is one of our Core Values. We have a proactive and aggressive approach to safety that involves all employees and subcontractors actively participating to provide a safe work environment on every project. The major components of Hull's corporate Health and Safety Plan (HASP) include:

- A drug-free work place program that includes "for cause" alcohol and drug screening for all employees
- Mandatory annual safety refresher training for all employees and specialized safety training whenever required
- An intranet-based Corporate HASP document that provides policy statements and direction to employees and also supports the preparation of site-specific health and safety plans.
- Daily job-site safety briefings with employees and subcontractors on all projects regardless of size or complexity
- Job-site safety audits conducted on a random basis by safety professionals with results reported on a grade card to both site personnel and executive management
- An intranet-based safety communication network that provides employees with safety metrics on a monthly basis plus serves as a platform to distribute near miss reports and other pertinent safety related information whenever necessary.

**Incident Review**

Please see Attachment B for Hull's Incident Review.

### Delta Environmental Consultants, Inc.

Delta has made tremendous progress in our overall health and safety performance over the past several years. Our Total Recordable Incident Rate (TRIR) has developed substantially as a result of the program improvements we have made.

Expanding upon an already comprehensive Health and Safety Program at Delta, we developed and launched a new comprehensive framework to help manage health and safety risks. This framework is called Delta's Safety Management System (SMS). The SMS is comprised of 10 essential elements, which are shown below and outlined in the following pages.

Delta's health and safety program and continuing initiatives are developed and molded with the input from all stakeholders: employees, subcontractors, clients, regulators and the general public. Delta's company operational structure is designed to be client-focused to ensure that Delta meets or exceed its client's requirements and expectations.

Delta is proud of its safety record, maintaining a four-year running average of approximately 0.8 Experience Modification Ratio (EMR). Our employees have a “work safely” motto engrained into their daily tasks and a full understanding of Delta's performance goals, project quality assurance and quality control procedures, and health and safety concerns. “Work safely” is not just a catch phrase at Delta – it is how we do business.

**Incident Review**
Please see Attachment C for Delta’s Incident Review and additional information regarding the Safety Management System.

## 1.7 Sub-Contractors

Neither Hull nor Delta own any interest in the subcontracting firms we utilize. This helps to avoid any conflicts of interests and ensures that we receive competitive bids for our projects. We strive to use MBE, WBE, and DBE subcontractors where available. We maintain relationships with subcontractors who are in line with our clients’ and our own high expectations for health & safety performance, quality work, and cost competitiveness. Based on our interpretation of the IFA’s Request for Qualifications, we are not bound to use a specific list of subcontractors. However, we regularly subcontract with the following firms:

- Pace Analytical Services, Inc. (Laboratory Services)
- Belmont Labs (Laboratory Services – MBE)
- Midway Services (Drilling Services)
- Environmental Field Services, Inc. (Drilling, Earthwork, and Remediation Installation Services)
- Hoosier Equipment Services, Inc. (Earthwork and Remediation Installation Services)
- HIS Constructors, LLC (Earthwork and Remediation Installation Services)
- Duke’s Earth Services, Inc. (Drilling, Earthwork, and Remediation Installation Services)

# Section 2
# Cost Estimate

Although the scope and budget of any given limited Phase II Environmental Site Assessment, UST Removal, or Remediation project cannot be developed without a better understanding of any site and its history, Hull and Delta are committed to providing quality services at competitive costs. Attachment F contains a fee schedule for Hull personnel; a fee schedule for Delta personnel; typical rates for drilling and monitoring well installation services; typical rates for UST removal and earthwork services; and rate sheets from two laboratories where samples may be submitted based on proximity to the project, availability of lab resources, etc.

# Section 3
# Previous Experience

## 3.1 Petroleum Remediation Projects

### Soil Excavation and Disposal

Excavation of impacted soils is applicable to a wide range of contaminants and soil types. The process involves removing the contaminated soil, transporting it to a permitted disposal facility or treating the soil on site and returning the treated soil to the excavation. The Hull and Delta team have used excavation as a treatment technique on soils impacted with a wide variety of contaminants including petroleum hydrocarbons, chlorinated organics, metals, and agricultural chemicals. The Hull and Delta team's experience has encompassed varying depths, shoring, stockpiling, stabilization and hazardous/non-hazardous disposal issues. The Hull and Delta team have used a variety of soil disposal and treatment techniques including:

- Excavation and soil disposal at a licensed landfill.
- Excavation and soil landfarming at a permitted landfarming facility.
- Excavation and soil treatment by biological treatment in an engineered biopile.
- Excavation and soil treatment by thermal desorption both on and off-site
- Excavation and soil stabilization both on and off-site.

### In-Situ Soil Vapor Extraction

SVE is widely used to remove VOCs from vadose zone soils. The Hull and Delta team have utilized SVE technology extensively as a simple solution to remediate impacted soils. The success of SVE is dependent on site geology, contaminant chemical properties and the thickness of the vadose zone soils. We've designed, overseen the installation and operated over 150 SVE systems. The Hull and Delta team's extensive experience with SVE technology ensures that it is applied only to those sites where it will be cost effective. The Hull and Delta team's SVE expertise includes:

- Use of the technology to treat soils contaminated with petroleum hydrocarbons and chlorinated organics.
- Use of computer models to model subsurface airflow patterns to design extraction well spacing and optimize flow rates.
- Design site-specific pilot tests, evaluate the data from the pilot tests and use the data to design and implement an effective system.
- Use of horizontal SVE wells.
- Use of surface seals including geomembranes and concrete/asphalt caps to improve the radius of influence.
- Knowledge of a wide variety of SVE machinery and equipment. The Hull and Delta team specifies equipment tailored to site conditions and is not dependent on the recommendations of equipment vendors.
- Use of innovative manifold piping designs that allow injection as well as extraction of air from the SVE points. This allows the same system to operate both as a SVE system and as a bioventing system.
- Use of programmable logic controllers to operate SVE points in a sequence, which may optimize vapor recovery rates.
- Use of vapor phase carbon adsorption and catalytic and thermal oxidation vapor treatment to meet emissions requirements.

## Ex-Situ Soil Treatment

Ex-situ bioremediation is a method of using the bioremediation process to economically cleanup VOCs and SVOCs. These systems may consist of an aeration system to provide oxygen to the microbes, an irrigation/nutrient injection system to provide nutrients and moisture after pile construction, and a leachate collection system for controlling excess moisture in the pile. A liner, berm, and cover protect the soil piles from storm events and prevent the spread of contaminants. Remediation times vary depending on contaminant concentrations, soil volume, nutrients, temperature, and microbial conditions. The Hull and Delta team's scientists feel that when properly constructed, the soil piles will be homogeneous in nature resulting in consistent remediation throughout the pile. We conduct pilot and bench-scale testing prior to implementing this technology to ensure all the factors are present for degradation of the target compounds. Our experience has included:

- A passively aerated soil pile of approximately 1500 cubic yards that remediated petroleum contamination in less than 90 days.
- Nine soil piles that featured controlled conditions for forced, passive and no aeration. The site had crude oil contamination that resulted in approximately 1,700 cubic yards needing treatment. The technology successfully remediated the impacted soil in less than one year.
- A large set of three soil piles that were contaminated with fuel oil as a result of a pipeline break. The piles were constructed with passive aeration, and soil gas, temperature, and moisture sensors. The technology remediated approximately 5,000 cubic yards of soil in one year.
- A 2,500 cubic yard, passively vented soil pile with PCP contamination that was suitable for thin spreading less than one year after construction.

## Groundwater Extraction and Treatment

**Groundwater Pump and Treat**

This approach involves pumping water from one or more wells, treating the water ex-situ, and discharging the treated water to a local Publicly Owned Treatment Works (POTW) or to a surface water body under a National Pollutant Discharge Elimination System (NPDES) permit. We have installed and operated over 40 pump and treat systems and have applied this technology to sites where:

- Hydraulic control or capture of a dissolved plume was required to protect downgradient receptors.
- Groundwater drawdown was required to allow collection of LNAPL with either a total fluids pumping system or with a groundwater/LNAPL dual pump system.
- The wells were located in a fractured bedrock environment.
- The design, installation, oversight and operation of a multi-well pump and treat system to provide hydraulic control of groundwater impacted with landfill leachate.

The use of pump and treat technology requires expertise in both the design and placement of the recovery wells and equipment, as well as treatment of the recovered water. The Hull and Delta team have designed water treatment systems that have successfully treated water impacted with a diverse selection of compounds. A partial listing includes:

- Air stripping utilizing diffused aeration tanks, shallow tray air strippers, and packed towers to treat water contaminated with compounds that have high Henry's constants

and low solubility. Examples include petroleum hydrocarbons (BTEX) and selected chlorinated solvents.

- Carbon adsorption to treat water with low contaminant concentrations, or as a polish after air stripping.
- Biological treatment utilizing a manufactured bioreactor to treat PCP.
- Precipitation by pH adjustment to treat groundwater with dissolved heavy metals.
- Passive cascade aeration followed by treatment with a constructed wetland to treat landfill leachate, effectively treating water that has a wide variety of different compounds with minimal O&M costs.
- High efficiency separation and heat exchangers to treat the liquid stream from an emulsified fuel oil/water mixture that was recovered as a part of a steam injection/pump and treat system.

## In-Situ Air Sparging

Air sparging is a process where air is injected into the saturated soils creating an in-situ stripper that removes dissolved phase contaminants through volatilization. Air sparging also introduces oxygen to the groundwater, which may increase aerobic biodegradation of targeted contaminants. SVE is typically used with air sparging to remove vapors stripped from the groundwater and prevent unintended vapor migration. We have used air sparge technology on over 70 projects to provide cost effective groundwater remediation without many of the technical inefficiencies and labor-intensive issues associated with other technologies. Our air sparging expertise includes:

- Use of gas tracers to determine injected airflow paths during pilot testing to help position extraction wells.
- Design of site-specific pilot tests to ensure the necessary information is accurately gathered for the design phase. Evaluation of pilot test data from these pilot tests and use the data to implement an effective system.
- Design of large-scale systems with more than 30 air sparge points coupled with SVE systems of more than 25 SVE points.
- Extensive knowledge of a wide variety of air sparge machinery and equipment. The Hull and Delta team specifies equipment tailored to site conditions.
- Use of programmable logic controllers to operate air sparge points in a sequence, optimizing the system's effectiveness and reducing air channeling, which can negatively impact treatment efficiency.
- Use of system telemetry to allow monitoring of isolated systems, reducing site visits and system down time.
- Use of air sparging to treat groundwater impacted with petroleum hydrocarbons and chlorinated organics.

## In-Situ Biological Treatment

In-situ bioremediation encompasses a wide range of technologies and techniques used to manipulate the subsurface environment to provide optimum conditions for microbial degradation of the targeted contaminants. This multi-disciplinary approach ensures that the correct technology is applied and that the installed system will effectively remediate the site. Successful implementation of in-situ bioremediation techniques requires the ability to evaluate the site geology, chemistry, and microbiology, to determine if a technique is feasible and what supplements would stimulate the indigenous microbial population. When the nature of the site and the supplements required to stimulate the indigenous microbial population has been determined, a site-specific system can be designed. We have designed more than 30 systems

to utilize natural microbial populations to mineralize contamination in soils and groundwater. Technologies used include:

- Bioventing to provide oxygen to vadose zone soils.
- Biosparging to oxygenate impacted groundwater and the “smear zone.”
- Groundwater extraction, augmenting oxygen levels and nutrient levels and reinjection via infiltration galleries and ponds.
- Introduction of hydrogen/oxygen release compounds as an electron acceptor.
- Soil nutrient augmentation and biosparging.
- The Hull and Delta team maintains a staff that has expertise in microbiology specifically applicable to in-situ bioremediation. Our in-situ bioremediation expertise includes:
  - A multi-disciplinary approach to in-situ bioremediation designs and implementation.
  - Design of site-specific pilot and bench-scale tests to evaluate the site-specific bioremediation data and to use the data for design purposes.
  - The use of on-site soil gas monitoring, including unattended soil gas monitoring with data logging and tracer gas studies to characterize the subsurface environment.
  - Staff resources with extensive experience with soil microbiology and the biological degradation process for a wide variety of petroleum and chlorinated hydrocarbons.
  - Experience with a large inventory of in-situ bioremediation techniques with the ability to choose the technology best suited to the site’s geology, chemistry, and COCs.
  - Experience with evaluation of collected bioparameter data to determine system effectiveness and required modifications to ensure effective remediation.

## In-Situ Chemical Oxidation

This remediation strategy involves injecting oxidants directly into the treatment zone. The oxidant chemicals react with the contaminants, producing relatively innocuous substances such as carbon dioxide, water, and inorganic chloride. Soil and groundwater contaminated with chlorinated solvents, MTBE, PAHs, benzene, toluene, ethylbenzene, and xylenes (BTEX), and other organic compounds can be effectively remediated in-situ with the aid of oxidizing agents.

The oxidant chemicals that are commonly considered for the in-situ destruction of organic contaminants include: potassium and sodium permanganate, hydrogen peroxide, the hydroxyl radical (as generated with Fenton's Reagent), and ozone. These oxidants can cause the rapid and complete chemical destruction of many toxic organic chemicals.

## Phytoremediation

Phytoremediation is defined as the use of plants or trees to contain, degrade, or reduce organic contaminants in soils, sediments, surface water, and groundwater. Phytoremediation is relatively easy to implement compared to other, more disruptive remediation techniques and provides a reliable technology for the natural uptake and transpiration of impacted groundwater and surface water. Phytoremediation also enhances the natural biodegradation of organic compounds in soil and groundwater. Additionally, phytoremediation serves as an aesthetically pleasing and environmentally friendly measure. Phytoremediation is limited in the depth that it can succeed and requires a surface area suitable for vegetation.

## Groundwater Containment/Barrier System

**Reactive Barrier**

Reactive barriers are used to treat contaminated groundwater plumes. A reactive barrier usually consists of an impermeable barrier installed vertically in a highly permeable trench. The trench is constructed perpendicular to groundwater flow. Reactive material is placed or injected in the trench to interact with the contaminants in the groundwater. The reactive material in the treatment zone can be designed to target specific compounds identified in the contaminant plume. Reactive barriers are commonly used to contain the off-site migration of a plume or to treat the plume across a naturally occurring funnel. Our experience includes:

- Reactive materials that provide anaerobic environments.
- Application of this technology to sites where a barrier was required to intercept off-site migration of a contaminant plume.
- A barrier to protect a potential receptor, such as a water supply well.

## Monitored Natural Attenuation/Risk Analysis

As a part of a risk-based approach to site remediation, the Hull and Delta team will consider MNA. MNA is defined as the reliance on natural attenuation processes (such as dispersion, volatilization, biodegradation, adsorption, and chemical reactions with subsurface materials) within the context of a carefully controlled and monitored clean-up approach, to achieve site-specific remedial objectives within a time frame that is reasonable compared to other methods. We approach the use of MNA with the same considerations as active remediation. The site geology, COCs, hydrogeology, and presence of receptors must be evaluated prior to implementation of a MNA program. The Hull and Delta team have extensive experience with the fate and transport of a variety of chemicals including petroleum hydrocarbons, chlorinated solvents, pesticides, and wood treatment chemicals. Our natural attenuation expertise includes:

- Staff resources with extensive modeling of subsurface fate and transport mechanisms of a wide variety of chemicals.
- Availability of an array of computer modeling resources to model fate and transport of the COCs.
- Natural attenuation monitoring and sampling capabilities.
- The assessment of monitoring data by professional biologists.

## Free Product Removal

In 2001, the Hull and Delta team modified the conventional Enhanced Fluid Recovery (EFR) process of using a vacuum truck, by employing a trailer mounted dual internal combustion engine (ICE) system to withdraw free product liquid and vapors from impacted wells on site. The use of the ICE provides effective free product removal and minimizes the wastewater and hydrocarbon emissions generated. The waste generated is typically one to two 55-gallon drums of impacted ground water. These drums will require on-site treatment and disposal or transport to a BP approved disposal facility. The technique requires less personnel and less expensive equipment. The result is a cost reduction of approximately $1,000 per one-day event, as compared to EFR performed with a conventional vacuum truck, and an increase in free product removed of up to 40%.

## Other

**Human Health & Ecological Assessments**
The Human Health and Ecological Risk Assessments (HHERAs) prepared by Hull and Delta team personnel are conducted to evaluate the likelihood that adverse human health or ecological effects may occur or are occurring as a result of exposure to one or more stressors, typically chemical or radiological in nature (although stressors may also be biological and physical). The Hull and Delta team's risk assessment process is highly quantitative, involving the identification of stressors and potential receptors, typically at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) National Priority List (NPL) "Superfund" sites.

The Hull and Delta team uses a tiered or phased approach when conducting an HHERA. The first tier is a highly conservative screening phase to determine if further evaluation is required. If necessary, second and possibly third tier, detailed, site-specific studies are conducted to evaluate potential risks.

In general, the Hull and Delta team follows the procedures described in the USEPA Publication 540-R-97-006, June 1997, "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, Interim Final," "Final Guidance: Ecological Risk Assessment and Risk Management Principles for Superfund Sites, 1999," in addition to other USEPA guidance documents for ecological risks. Additionally, Hull and Delta team members use the USEPA Risk Assessment Guidance for Superfund (RAGs) documents for guidance when performing the HHERAs at Superfund sites, plus other USEPA guidance documents. These assessments include the development of an estimate of "baseline risks" and assessment of the potential health dangers by analyzing the contamination at the site, estimating exposure, assigning potential health dangers, and calculating the site risk.

The HHERA is an integral part of the Remedial Investigation/Feasibility Study (RI/FS) process and provides valuable information that is used to determine the extent of contaminants present, their threat to human health and the environment, and the scope of the remedial action required to reduce the risks to acceptable levels.

**Ozone Air Sparging**
Ozone air sparging is a process where ozone is injected into the saturated soils to directly oxidize petroleum hydrocarbons. Ozone air sparging also creates hydroxyl radicals that further oxidize organic compounds. Ozone air sparging can be applied without SVE because it destroys hydrocarbons rather than volatizing them. Ozone air sparge technology is currently being used by Delta on a large petroleum project in California.

**In-situ Submerged Oxygen Curtain**
The in-situ submerged oxygen curtain (iSOC) technology is an oxygen delivery system that can be used in existing monitoring wells to diffuse high concentrations of dissolved oxygen into the aquifer. ISOC units are suspended in monitoring wells and connected via polyflow tubing to a control panel and industrial grade oxygen tank. The technology can be used to deliver 40 to 200 parts per million (ppm) of oxygen into the groundwater to create an oxygen barrier at the plume edge or as source treatment at the center of the plume.

**Engineering Controls (Capping, Fencing, Deed Restrictions, Land Use Controls, etc.)**
Engineering controls include structures and documents that manage the regulated substances in place and permanently assure that COCs do not further contribute to receptor impacts or

cause risk to human health through direct contact. Common methods of engineering controls include capping a site with an impermeable membrane or aggregate, fencing to limit site access, and deed restrictions and land use controls to limit or prohibit site uses.

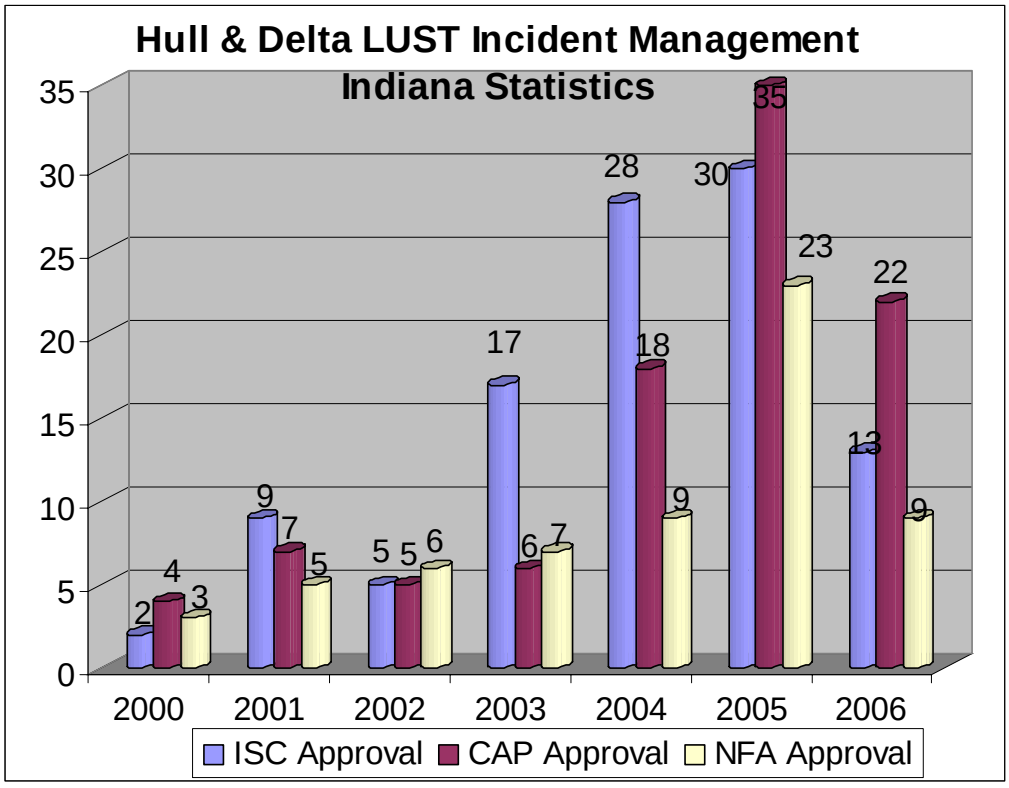
While capping and fencing are typically fairly simple to implement, deed restrictions and land use controls are slightly more complex. The Hull and Delta team have extensive experience with deed restrictions and land use controls. We have:

- Applied engineering controls to over 500 projects and received more than 400 regulatory closures.
- Developed and advocated programs with responsible parties, municipalities, regulatory agencies, and private third parties for engineering controls as remedial actions.
- Piloted and continue to evaluate partnerships with permitting and utility locate companies who would participate in the notification of land use controls.
- Reduced overall remediation costs by 20 to 60 percent for active remediation projects by applying land use controls on residual impacted areas while focusing active remediation efforts on highly contaminated soils or liquid phase hydrocarbon groundwater sources.

## 3.2 Indiana Site Closures

Hull and Delta managed Leaking Underground Storage Tank Incident closures can be summarized by Figure 1 and the accompanying list in Table 1.

**Figure 1 – Indiana LUST Incidents**



# Table 1 – Hull and Delta's LUST Incident Closures

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 198812032 | 2/21/06 | Received from IDEM - Approval | Site Characterization |
| 198812032 | 7/27/06 | Received from IDEM - Approval | Corrective Action Plan |
| 198903083 | 12/3/04 | Received from IDEM - Approval | Corrective Action Plan |
| 198903083 | 12/3/04 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 198905012 | 5/4/06 | Received from IDEM - Approval | Site Characterization |
| 198905510 | 7/20/05 | Received from IDEM - Approval | No Further Action |
| 198906058 | 1/7/05 | Received from IDEM - Approval | Corrective Action Plan |
| 198906058 | 1/31/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 198906058 | 8/22/06 | Received from IDEM - Approval | Corrective Action Plan |
| 198906098 | 4/16/04 | Received from IDEM - Approval | Site Characterization |
| 198909066 | 2/28/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 198909066 | 8/31/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 198909066 | 10/13/05 | Received from IDEM - Approval | Site Characterization |
| 198909066 | 4/26/06 | Received from IDEM - Approval | Corrective Action Plan |
| 198909066 | 8/17/06 | Received from IDEM - Approval | Corrective Action Plan |
| 198910145 | 6/30/05 | Received from IDEM - Approval | Site Characterization |
| 198911072 | 10/13/05 | Received from IDEM - Approval | Site Characterization |
| 198911073 | 9/2/05 | Received from IDEM - Approval | No Further Action |
| 198911532 | 1/10/06 | Received from IDEM - Approval | Site Characterization |
| 198911534 | 7/31/06 | Received from IDEM - Approval | Site Characterization |
| 199002508 | 12/10/04 | Received from IDEM - Approval | No Further Action |
| 199003517 | 6/16/04 | Received from IDEM - Approval | Site Characterization |
| 199003551 | 5/4/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199004524 | 4/18/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199004524 | 8/22/05 | Received from IDEM - Approval | Site Characterization |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199004524 | 7/19/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199004536 | 1/22/04 | Received from IDEM - Approval | Site Characterization |
| 199004536 | 2/9/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199004536 | 2/9/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199004539 | 2/20/03 | Received from IDEM - Approval | No Further Action |
| 199005122 | 4/26/02 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199005122 | 8/22/06 | Received from IDEM - Approval | No Further Action |
| 199005506 | 5/16/06 | Received from IDEM - Approval | Further Site Investigation |
| 199005507 | 11/15/02 | Received from IDEM - Approval | No Further Action |
| 199006538 | 7/1/03 | Received from IDEM - Approval | Site Characterization |
| 199006538 | 11/4/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199007517 | 12/10/04 | Received from IDEM - Approval | No Further Action |
| 199007527 | 6/7/06 | Received from IDEM - Approval | No Further Action |
| 199007528 | 8/22/05 | Received from IDEM - Approval | Site Characterization |
| 199007528 | 7/18/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199007530 | 7/5/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199007535 | 6/10/05 | Received from IDEM - Approval | Site Characterization |
| 199007535 | 6/10/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199007538 | 8/22/05 | Received from IDEM - Approval | Site Characterization |
| 199007538 | 5/4/06 | Received from IDEM - Approval | No Further Action |
| 199007539 | 11/3/04 | Received from IDEM - Approval | Site Characterization |
| 199007539 | 3/30/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199007541 | 8/13/03 | Received from IDEM - Approval | Site Characterization |
| 199007541 | 7/28/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199008504 | 7/28/06 | Received from IDEM - Approval | Site Characterization |
| 199008600 | 1/25/06 | Received from IDEM - Approval | Site Characterization |
| 199008600 | 5/4/06 | Received from IDEM - Approval | No Further Action |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199008610 | 8/16/05 | Received from IDEM - Approval | Site Characterization |
| 199008610 | 8/16/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199010530 | 4/26/06 | Received from IDEM - Approval | Site Characterization |
| 199010553 | 6/4/04 | Received from IDEM - Approval | Site Characterization |
| 199010553 | 11/9/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199010553 | 8/17/06 | Received from IDEM - Approval | No Further Action |
| 199010570 | 5/5/05 | Received from IDEM - Approval | Site Characterization |
| 199010582 | 7/5/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199012505 | 11/23/03 | Received from IDEM - Approval | Corrective Action Plan |
| 199012505 | 3/30/05 | Received from IDEM - Approval | Site Characterization |
| 199012506 | 6/10/05 | Received from IDEM - Approval | Site Characterization |
| 199012506 | 6/10/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199012512 | 6/16/04 | Received from IDEM - Approval | Site Characterization |
| 199012512 | 6/30/05 | Received from IDEM - Approval | No Further Action |
| 199012515 | 10/27/04 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199012515 | 1/31/06 | Received from IDEM - Approval | No Further Action |
| 199012539 | 6/4/04 | Received from IDEM - Approval | Site Characterization |
| 199012539 | 11/9/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199012539 | 8/17/06 | Received from IDEM - Approval | No Further Action |
| 199103524 | 8/25/05 | Received from IDEM - Approval | Site Characterization |
| 199103524 | 5/12/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199104523 | 5/5/05 | Received from IDEM - Approval | Site Characterization |
| 199104540 | 5/28/03 | Received from IDEM - Approval | Site Characterization |
| 199104540 | 7/17/03 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199104540 | 7/8/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199104556 | 8/22/05 | Received from IDEM - Approval | Site Characterization |
| 199104556 | 7/18/06 | Received from IDEM - Approval | Corrective Action Plan |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199106564 | 1/22/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199107513 | 2/16/04 | Received from IDEM - Approval | No Further Action |
| 199107522 | 11/8/04 | Received from IDEM - Approval | No Further Action |
| 199107536 | 1/6/05 | Received from IDEM - Approval | Site Characterization |
| 199107536 | 8/1/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199107537 | 8/29/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199107539 | 3/23/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199107539 | 8/5/04 | Received from IDEM - Approval | Site Characterization |
| 199107540 | 3/7/05 | Received from IDEM - Approval | Site Characterization |
| 199107540 | 7/31/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199107545 | 10/13/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199108562 | 1/15/02 | Received from IDEM - Approval | No Further Action |
| 199108597 | 8/19/03 | Received from IDEM - Approval | Site Characterization |
| 199108597 | 10/13/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199109143 | 11/17/03 | Received from IDEM - Approval | Site Characterization |
| 199109143 | 12/23/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199109143 | 12/23/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199109502 | 11/10/03 | Received from IDEM - Approval | Site Characterization |
| 199109502 | 5/6/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199109502 | 8/22/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199109531 | 8/12/04 | Received from IDEM - Approval | Site Characterization |
| 199111534 | 1/26/05 | Received from IDEM - Approval | Site Characterization |
| 199111534 | 6/6/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199111534 | 7/8/05 | Received from IDEM - Approval | No Further Action |
| 199112504 | 10/10/03 | Received from IDEM - Approval | Site Characterization |
| 199112504 | 5/18/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199112504 | 8/22/05 | Received from IDEM - Approval | Corrective Action Plan |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199112509 | 3/8/05 | Received from IDEM - Approval | Site Characterization |
| 199202526 | 4/26/06 | Received from IDEM - Approval | Site Characterization |
| 199202526 | 10/26/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199205521 | 8/13/03 | Received from IDEM - Approval | No Further Action |
| 199206161 | 3/15/04 | Received from IDEM - Approval | Site Characterization |
| 199206161 | 8/12/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199207524 | 12/6/05 | Received from IDEM - Approval | Site Characterization |
| 199207524 | 3/10/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199208521 | 9/28/04 | Received from IDEM - Approval | Site Characterization |
| 199208521 | 11/22/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199208521 | 4/18/05 | Received from IDEM - Approval | No Further Action |
| 199208522 | 3/26/02 | Received from IDEM - Approval | No Further Action |
| 199302521 | 4/4/02 | Received from IDEM - Approval | Site Characterization |
| 199306310 | 7/30/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199306310 | 11/5/04 | Received from IDEM - Approval | Site Characterization |
| 199306310 | 11/5/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199306503 | 6/6/05 | Received from IDEM - Approval | No Further Action |
| 199306552 | 3/18/03 | Received from IDEM - Approval | Site Characterization |
| 199306552 | 6/6/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199308510 | 2/17/05 | Received from IDEM - Approval | No Further Action |
| 199309502 | 11/17/04 | Received from IDEM - Approval | No Further Action |
| 199311512 | 2/1/02 | Received from IDEM - Approval | Site Characterization |
| 199311512 | 2/11/02 | Received from IDEM - Approval | Corrective Action Plan |
| 199311513 | 7/14/04 | Received from IDEM - Approval | Site Characterization |
| 199311546 | 11/21/03 | Received from IDEM - Approval | No Further Action |
| 199312546 | 12/16/03 | Received from IDEM - Approval | Site Characterization |
| 199312546 | 8/22/06 | Received from IDEM - Approval | Corrective Action Plan |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199312556 | 10/19/04 | Received from IDEM - Approval | Site Characterization |
| 199312556 | 2/1/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199312556 | 2/7/06 | Received from IDEM - Approval | No Further Action |
| 199401528 | 3/8/04 | Received from IDEM - Approval | Corrective Action Plan |
| 199401528 | 7/27/06 | Received from IDEM - Approval | No Further Action |
| 199406023 | 6/16/04 | Received from IDEM - Approval | Site Characterization |
| 199406539 | 3/8/05 | Received from IDEM - Approval | Site Characterization |
| 199406539 | 11/30/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199406539 | 5/30/06 | Received from IDEM - Approval | Corrective Action Plan |
| 199407121 | 1/30/04 | Received from IDEM - Approval | No Further Action |
| 199407550 | 3/10/06 | Received from IDEM - Approval | Site Characterization |
| 199410546 | 12/16/03 | Received from IDEM - Approval | No Further Action |
| 199410560 | 5/12/03 | Received from IDEM - Approval | Site Characterization |
| 199410560 | 5/12/03 | Received from IDEM - Approval | Corrective Action Plan |
| 199411536 | 5/8/02 | Received from IDEM - Approval | Corrective Action Plan |
| 199411536 | 2/16/04 | Received from IDEM - Approval | Site Characterization |
| 199411536 | 8/31/05 | Received from IDEM - Approval | No Further Action |
| 199411536 | 5/24/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 199502541 | 3/19/02 | Received from IDEM - Approval | No Further Action |
| 199504537 | 8/17/06 | Received from IDEM - Approval | Site Characterization |
| 199509528 | 7/21/04 | Received from IDEM - Approval | Site Characterization |
| 199606537 | 2/16/04 | Received from IDEM - Approval | No Further Action |
| 199611523 | 7/20/05 | Received from IDEM - Approval | No Further Action |
| 199706513 | 5/31/05 | Received from IDEM - Approval | Corrective Action Plan |
| 199808506 | 7/1/02 | Received from IDEM - Approval | No Further Action |
| 199901525 | 1/23/04 | Received from IDEM - Approval | No Further Action |
| 199903568 | 2/13/04 | Received from IDEM - Approval | No Further Action |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 199903568 | 6/3/04 | Received from IDEM - Approval | Site Characterization |
| 200001526 | 12/2/03 | Received from IDEM - Approval | Site Characterization |
| 200001526 | 8/31/05 | Received from IDEM - Approval | No Further Action |
| 200003500 | 11/17/03 | Received from IDEM - Approval | Site Characterization |
| 200003500 | 2/5/04 | Received from IDEM - Approval | Corrective Action Plan |
| 200003500 | 9/26/05 | Received from IDEM - Approval | No Further Action |
| 200003520 | 8/22/05 | Received from IDEM - Approval | Site Characterization |
| 200003520 | 10/17/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 200007513 | 8/1/03 | Received from IDEM - Approval | Site Characterization |
| 200007513 | 6/1/04 | Received from IDEM - Approval | Corrective Action Plan |
| 200008506 | 12/19/03 | Received from IDEM - Approval | Further Site Investigation Addendum |
| 200008506 | 8/12/04 | Received from IDEM - Approval | Site Characterization |
| 200008506 | 8/12/05 | Received from IDEM - Approval | No Further Action |
| 200010501 | 2/21/06 | Received from IDEM - Approval | Site Characterization |
| 200010501 | 7/27/06 | Received from IDEM - Approval | Corrective Action Plan |
| 200010506 | 11/18/02 | Received from IDEM - Approval | Site Characterization |
| 200010506 | 5/21/03 | Received from IDEM - Approval | Corrective Action Plan |
| 200010520 | 8/24/06 | Received from IDEM - Approval | Site Characterization |
| 200010521 | 12/23/04 | Received from IDEM - Approval | No Further Action |
| 200102505 | 11/4/05 | Received from IDEM - Approval | Site Characterization |
| 200102505 | 6/9/06 | Received from IDEM - Approval | Corrective Action Plan |
| 200103504 | 2/8/02 | Received from IDEM - Approval | No Further Action |
| 200103505 | 6/30/03 | Received from IDEM - Approval | Site Characterization |
| 200103505 | 1/21/04 | Received from IDEM - Approval | Corrective Action Plan |
| 200103505 | 5/6/05 | Received from IDEM - Approval | No Further Action |
| 200106508 | 5/14/02 | Received from IDEM - Approval | Site Characterization |
| 200106508 | 5/14/02 | Received from IDEM - Approval | Corrective Action Plan |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 200106508 | 9/30/05 | Received from IDEM - Approval | No Further Action |
| 200106509 | 5/5/05 | Received from IDEM - Approval | Site Characterization |
| 200107500 | 7/21/04 | Received from IDEM - Approval | Site Characterization |
| 200108108 | 1/13/05 | Received from IDEM - Approval | No Further Action |
| 200110502 | 2/4/04 | Received from IDEM - Approval | Site Characterization |
| 200110502 | 7/14/04 | Received from IDEM - Approval | Corrective Action Plan |
| 200110514 | 5/8/02 | Received from IDEM - Approval | Corrective Action Plan |
| 200110514 | 2/16/04 | Received from IDEM - Approval | Site Characterization |
| 200110514 | 5/24/06 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 200110516 | 6/27/03 | Received from IDEM - Approval | Site Characterization |
| 200110516 | 10/31/03 | Received from IDEM - Approval | Corrective Action Plan |
| 200110519 | 9/16/05 | Received from IDEM - Approval | Site Characterization |
| 200111503 | 8/19/03 | Received from IDEM - Approval | Site Characterization |
| 200111503 | 10/13/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200112507 | 8/15/03 | Received from IDEM - Approval | Site Characterization |
| 200112507 | 1/13/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200201500 | 1/12/04 | Received from IDEM - Approval | Site Characterization |
| 200201500 | 4/12/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200201501 | 10/13/05 | Received from IDEM - Approval | Site Characterization |
| 200201512 | 4/4/02 | Received from IDEM - Approval | Site Characterization |
| 200202500 | 8/28/03 | Received from IDEM - Approval | No Further Action |
| 200204517 | 4/11/05 | Received from IDEM - Approval | Site Characterization |
| 200204517 | 10/13/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200204519 | 9/10/04 | Received from IDEM - Approval | Site Characterization |
| 200204519 | 9/12/05 | Received from IDEM - Approval | No Further Action |
| 200207038 | 4/11/05 | Received from IDEM - Approval | Site Characterization |
| 200207038 | 8/22/05 | Received from IDEM - Approval | Corrective Action Plan |

| LUST Number | Date | Correspondence Category | Correspondence Description |
|---|---|---|---|
| 200207501 | 8/16/05 | Received from IDEM - Approval | Site Characterization |
| 200207501 | 8/16/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200207514 | 9/20/05 | Received from IDEM - Approval | No Further Action |
| 200211500 | 5/30/06 | Received from IDEM - Approval | No Further Action |
| 200302502 | 12/31/04 | Received from IDEM - Approval | Site Characterization |
| 200302502 | 7/8/05 | Received from IDEM - Approval | Corrective Action Plan |
| 200302502 | 7/8/05 | Received from IDEM - Approval | Corrective Action Plan Addendum |
| 200302508 | 2/24/03 | Received from IDEM - Approval | No Further Action |
| 200303504 | 10/13/05 | Received from IDEM - Approval | Site Characterization |
| 200303508 | 7/28/04 | Received from IDEM - Approval | Site Characterization |
| 200303508 | 2/18/05 | Received from IDEM - Approval | No Further Action |
| 200304508 | 11/20/03 | Received from IDEM - Approval | Corrective Action Plan |
| 200304508 | 3/15/05 | Received from IDEM - Approval | No Further Action |
| 200306505 | 10/26/04 | Received from IDEM - Approval | Site Characterization |
| 200306505 | 10/25/06 | Received from IDEM - Approval | Corrective Action Plan |
| 200306512 | 1/26/05 | Received from IDEM - Approval | Site Characterization |
| 200306512 | 3/21/06 | Received from IDEM - Approval | Corrective Action Plan |
| 200307504 | 10/8/03 | Received from IDEM - Approval | No Further Action |
| 200308500 | 4/30/04 | Received from IDEM - Approval | Site Characterization |
| 200308500 | 5/11/05 | Received from IDEM - Approval | No Further Action |
| 200403192 | 5/16/06 | Received from IDEM - Approval | Site Characterization |
| 200407509 | 9/2/05 | Received from IDEM - Approval | No Further Action |
| 200407516 | 5/6/05 | Received from IDEM - Approval | No Further Action |

## 3.3 Fixed-Price Remediation Contracts and Success Rate in Achieving Cleanup Targets

Although still not as commonplace as standard time and materials (T&M)-based fee structures, fixed-price remediation contracts are becoming increasingly popular tools for clients interested in understanding risk, transferring liabilities, or otherwise managing long-term remediation and cost management goals. Hull and Delta have worked with several clients on fixed-price remediation contracts; in the process we have brought multiple parties together to reach solutions that are favorable for all parties. These select clients are typically more tolerable of the risks associated with liability transfer, and have retained our collective expertise to help negotiate long-term operations and maintenance plans, predict long-term remediation costs, and negotiate appropriate insurance terms. We have worked with a number of insurance underwriters to provide costs, remediation assumptions, evaluations of remediation technologies, and site- or portfolio-specific information for underwriters' use in writing pollution cap insurance, and stop-loss policies. Typically such contracts and insurance products are for multi-year, multi-million dollar remediation projects for which we have entered into strict confidentiality agreements. Should the IFA request additional information based on specific questions, we would be willing to provide information, provided we would not be in breach of contract.

# Section 4
# Geographic Coverage Area

Hull and Delta routinely work in all regions of the State and would be happy to assist IFA in any region. We consider ourselves extremely strong in our knowledge of Indiana geology and environmental issues throughout the State. In addition, we are centrally-located in Indiana and combine field projects, site visits, and client meetings with adjacent projects, etc. as much as possible, offering savings and efficiencies to our clients.

However, in consideration of the IFA's likely desire to maximize remediation, Hull and Delta acknowledge that we work in certain areas of Indiana relatively more frequently than others. In addition, our offices in Toledo, Ohio and Cincinnati, Ohio are well-suited to serving the northeast and southeast regions of the State well, should Indiana-based personnel not be available.

Therefore, we request consideration for the following regions, in order:

1) Region 6
2) Region 7
3) Region 5
4) Region 2
5) Region 3
6) Region 1
7) Region 4

# Section 5
# Client References

**ConocoPhillips**
Bill Lundeen
Central Region Manager
Risk Management & Remediation
ConocoPhillips Company
600 N. Dairy Ashford
Houston, TX 77252-2197
832-379-6429
bill.j.lundeen@conocophillips.com

**Exxon - For UST Projects**
Mr. Greg Clanton
ExxonMobil Global Remediation
5224 West State Road 46
Box #339
Sanford, FL 32771-9230
(407) 880-4347 phone
(407) 880-3609 fax
C.Greg.Clanton@exxonmobil.com

**Getty**
Kevin Shea
Vice President
Getty Realty Corp.
125 Jericho Turnpike
Suite 103
Jericho, NY 11753
516.478.5480

**Shell**
Mr. John Sexton
Director – Science & Engineering
Shell Oil Products US
Health, Safety and Environment
Science and Engineering
One Shell Plaza
910 Louisiana St.
OSP634
Houston, TX 77002
713/241-1507
JRSexton@ShellOPUS.com

**Exxon - For Terminals, Pipelines, Refining**
Ms. Deborah Edwards
ExxonMobil Global Remediation
2800 Decker Drive
Room NW-61
Baytown, TX 77520
(281) 834-8963 phone
(281) 834-3604 fax
deborah.a.edwards@exxonmobil.com

# Section 6
# Other Information

## 6.1 Underground Storage Tank Program

The Underground Storage Tank (UST) market is a mature and competitive market, but Hull's experience in resolving UST issues safely, quickly and cost-effectively is what sets us apart. We do this by streamlining investigations, implementing risk-based corrective action, using and evaluating innovative technologies, and staying on top of regulatory requirements. We have successfully managed hundreds of UST projects, including more than 850 for a major oil company. Our team of experts has conducted hydrogeological investigations, risk-based corrective actions, remediation design, and cost-benefit analyses, often managing large portfolios of sites.

**Cost Effective Corrective Action Management**

We strive to conduct corrective actions in the most effective manner. Applying a risk-based corrective action can save both time and money, and limit liability. Because of the potential savings and other benefits for conducting risk-based corrective action, Hull has responded to this growing trend by integrating highly qualified risk assessors trained in the latest risk-based programs and approaches with our UST team. We follow applicable federal and state regulations and incorporate site-specific exposure assumptions to develop an investigative or remedial approach that minimizes site closure costs and protects human health and the environment.

**Site Investigations**

Geological conditions vary significantly from site to site. This requires widespread knowledge of available techniques, which save businesses time and money without jeopardizing final results. We have evaluated numerous sites and can quickly determine the most suitable technique to obtain reliable data. Our UST team has successfully employed or evaluated innovative investigative techniques such as direct push drilling; geophysical techniques, such as ground penetrating radar; and remedial techniques, such as hydraulic fracturing, microsparging, and dual phase vacuum extraction (DVE).

We also have a data management system that electronically accepts data from the laboratory and places the data in a tabular format for interpretation. This process substantially reduces data evaluation and report writing costs. We can also employ geographic data position system (GPS) data management into the assessment process allowing for efficient spatial site data management with GIS.

**Minimizing Costs through UST Reimbursement Funds**

Costs associated with UST cleanups can be offset by seeking reimbursement of funds from states that have established programs. We have successfully assisted clients with obtaining reimbursement for corrective action cost at sites, and have evaluated eligibility requirements, obtained appropriate records and documentation, tracked costs, and prepared applications for reimbursement of funds.

**Compliance Management/Economic Benefit Analysis**
In addition to technical assistance, the Hull and Delta team can help clients determine the optimal economic approach to managing their USTs by developing long-term, cost-effective compliance programs. New regulations require more aggressive compliance schedules for UST systems. To help clients meet these schedules, the team assists both private industries and local governments in determining future upgrading requirements by developing long-term strategies for monitoring, managing, and financing a multiple tank compliance program. In addition, economic evaluations are conducted to determine necessary expenditures for upgrading tanks and achieving compliance.

**Regulatory Involvement**
Due to the effect of changing regulations on our clients' business, the Hull and Delta team continues to be involved in the development of new rules, including risk-based cleanup standards. The Hull and Delta team manages a significant portfolio of sites in Indiana for a major oil company, and as such closely follows changes in Indiana's regulatory environment. This allows us to provide our clients valuable insight into the intended application of the rules and the direction of changing regulatory programs. In Ohio, we are a member of the Ohio Bureau of Underground Storage Tank Regulations rule development committee and serves on the Petroleum Underground Storage Tank Release Compensation Board. We developed the BUSTR Tier 2 spreadsheets for both the 1999 and 2005 BUSTR corrective action rules.

**Remediation/Closure**
The Hull and Delta team provides full-scale remediation system design, some of which have included vacuum extraction, ground water sparging, treatment trenches, and pump-and-treat systems. We have also designed monitoring programs to demonstrate remediation by natural attenuation and have conducted pilot testing on various technologies, including air sparging, vacuum extraction, and hydraulic fracturing. Interim corrective actions, such as DVE or groundwater extraction via MTU, have been performed when needed. We also have successfully used system control and data acquisition (SCADA) to remotely monitor and control remediation systems. SCADA decreases system operation and maintenance visits and increases overall system operational time by 30 to 40 percent, thus decreasing lifecycle costs to cleanup.

**New System Installation**
The Hull and Delta team has designed and prepared specifications for new UST systems. Our UST design can prepare bid specifications and provide contractor oversight.

## 6.2 Urban Revitalization and Conservation

"*Brownfields*" is a catch phrase for abandoned, idle or underused industrial or commercial properties where redevelopment is hindered by real – or perceived – contamination. These sites, unless restored to a productive use, will continue to challenge the local economic vitality by discouraging growth and causing blight. The path to revitalizing these properties, to once again obtain a productive use from them, has proven difficult. Developers and investors are reluctant to commit their time or resources due to potential liability concerns, complex regulations, and uncertainties over the scope and cost of any cleanup that may be required.

Successful urban revitalization demands that smart decisions be

made when transforming a neglected or abandoned property into viable real estate. The Hull and Delta team is proud to have helped numerous clients build a stronger economic future for their community and improve the quality of life for the people who live there. Our value is evident through our many accomplishments and our diverse team of experts in economic development, risk assessment, remedial design and oversight, construction services, liability transfer, funding and planning, and community outreach and public relations.

**Redevelopment Programs**
In recent years, federal agencies and state legislatures have begun to focus on the economic and liability issues of these properties. Both have made efforts to create programs that encourage the redevelopment of properties with real or perceived environmental impairment.

Increasingly, these programs are offered as part of a larger economic development initiative to revitalize urban areas and are intended to protect the public and future property owners while still facilitating brownfield redevelopment activities. Many of these programs can also grant "statutory" limits on future liability from environmental impacts.

Therefore, the Hull and Delta team customizes investigation and assessments to ensure that regulatory requirements are met for successful property redevelopment.

We have experience with a variety of funding and assistance programs provided by both federal and state and brownfield voluntary remediation programs. These programs can help finance a property assessment or can establish more pragmatic cleanup requirements based on brownfield redevelopment goals. When necessary, we can also serve as a government liaison and provide community relations support.

## 6.3 Site Assessments and Remediation

Phased site assessments are integral to identifying potential environmental hazards and defining the need for cleanup. There are various procedures and protocols for dealing with hazardous substances and petroleum products at sites that have been contaminated via a variety of release mechanisms. Furthermore, consideration must be given to physical conditions, future use of the site and the presence or absence of receptors at and surrounding the site.


The Hull and Delta team provides design, construction services and litigation support for all phases of an assessment and remediation project. Our efforts with respect to landfill engineering projects, environmental monitoring regulatory programs, brownfield redevelopment efforts, risk evaluations, and remedial investigations/feasibility studies have met the needs of our clients on a wide-range of projects.

One of our core strengths is our innovative application of soil and groundwater remediation technologies. Our professionals recognized early that integrating the strengths of multiple technologies was necessary to improve upon the limitations of single technologies and have been incorporating multiple remediation technologies in our corrective action systems for years. At times, remediation is a complex process that requires sound application of process engineering and hydrogeologic principles to the physical and flow characteristics occurring

within the subsurface. We have continually evolved our approach to assure optimum success by staying on the leading edge of available technologies.

To achieve regulated environmental cleanups and to support property transactions and development efforts, the Hull and Delta team has developed an all-embracing environmental site assessment program. Each assessment is designed to meet the specific needs of the client without jeopardizing accuracy and completeness of the assessment. At a minimum, the Hull and Delta team implements historical and regulatory records review, site reconnaissance and report recommendations for all assessments.

The Hull and Delta team has investigated and designed remediation systems for abandoned dumps, solid waste landfills, National Priorities List sites, RCRA facilities, aboveground and underground storage tank sites, and industrial facilities. The contaminants of concern at these remediation sites have included petroleum hydrocarbons, chlorinated solvents, pesticides, herbicides, fertilizers, landfill leachate, heavy metals, wood treatment chemicals, and mineral spirits. In addition, Hull and Delta team provides consulting services and assists clients with site investigation and cleanup initiatives for brownfields under state voluntary remediation programs (VRPs).

## 6.4 Funding

Funding is key to making any type of redevelopment project economically worthwhile. Tax abatements, credits, grants, and low-interest loans can all dictate whether project plans are actually implemented. The Hull and Delta team assists clients with researching, preparing, and securing a variety of local, state, and federal funding for various types of projects. Some of these projects include ecological preservation and restoration, brownfield redevelopment, improved or expanded infrastructure, and public education and awareness campaigns.

Many private, public and non-profit entities have benefited from the Hull and Delta team's understanding of various funding programs. When the project begins, we compile a list of possible funding sources and their criteria. Our familiarity with many funding programs and agencies assists in gaining insight to priorities and in defining project approaches. We work with our clients to determine fund applicability and potential for award. Following this analysis, the Hull and Delta team structures and writes grants to best explain the tasks to be completed, keeping in mind the benefits of the project to the community, environment, economy, or to the quality of life for nearby residents. Oftentimes, community support must be obtained and verified in grant applications. Our team specializes in gaining community understanding and support for projects, many times involving complex issues, and have successfully written grant applications in excess of $60 million.

Our planners, working closely with our engineers and scientists, can assist communities, port authorities, developers, landfill managers, watershed coordinators, and preservation organizations to complete master plans or final use strategies. These plans can lead to the

identification of the most beneficial future uses of properties, outline properties most suitable for preservation or development, or create zoning overlays or other planning mechanisms to address natural or cultural resource protection. Strategy documents will outline recommended actions based on thorough research and knowledge of smart planning practices and regulations.

For effective plan implementation, upfront stakeholder consensus is essential. The Hull and Delta team specializes in involving representatives from various points of view to gather input and to gain an understanding of site-specific issues. This information is appropriately integrated into recommendations and shared with the community for input and additional perspectives. The client will be assured at project completion that plans are timely, comprehensive, reflective of local issues and concerns, legally defensible, and inclusive of all relevant stakeholders.

Our experts have completed many plans, including several landfill final use plans, Brownfield redevelopment plans, master wetland mitigation plans, master sustainable growth plans outlining mechanisms for preservation and development, resource inventories, watershed improvement plans, and many more.

## 6.5 Public Relations

The Hull and Delta team also provides public relations support, with public involvement often being a vital component of many projects. Through in-house public relations specialists, we have the expertise to establish and implement an effective public involvement program to complement your project.

Our staff has participated in more than 125 public information meetings and public hearings regarding a variety of environmental issues. We have partnered with many cities, educating local residents and responding to media inquiries and other concerns over potential health risks in their community.

We are very familiar with state and federal EPA public involvement requirements and programs, and work attentively to provide our clients with the appropriate level of support. Hull and Delta team professionals have represented clients at numerous public information sessions, public hearings and press conferences. Our comprehensive services include needs in all areas:

- Community relations plans preparation
- Public meeting representation/ presentations
- Media relations strategies
- Coordination with state/federal regulatory agencies
- Public notification (public notices, news releases)
- Risk communication or consensus building
- Training/ conferences
- Educational material preparation

# Appendix A

## Resumes

# Douglas G. Stuart, CHMM

Senior Project Manager

*Mr. Stuart is a Certified Hazardous Materials Manager and has been involved with site assessment, risk evaluation, closure, and remediation projects at several hundred UST properties. During his employment at Hull, Mr. Stuart was employed as an in-house consultant on contract to a major North American petroleum retailer, where he managed corrective action projects at retail UST and oil terminal properties to balance cost, remediation, and reputation goals. Mr. Stuart currently manages projects pursuant to Indiana's Risk Integrated System of Closure, Indiana's Brownfield Program, and Indiana's Leaking Underground Storage Tank program, and has also conducted projects in accordance with Ohio's Voluntary Action Program, U.S. EPA RCRA, and ASTM Standard E 1527-05 (AAI Phase I Environmental Site Assessments). Mr. Stuart also serves as co-chair of the Technical Committee of the National Brownfields Association's Indiana Chapter, reporting to the Executive Committee.*

**education**

Bachelor of Science, Natural Resource Development, The Ohio State University, 1992
Master of Science, Environmental Science, The Ohio State University including a thesis titled "Sorption and Biodegradation of Atrazine Under Sulfide-Amended and Non-Sulfide-Amended Conditions", 1995

**professional work history**

Project Manager, Office Manager (Indianapolis, IN), Hull & Associates, Inc.: 2002 – present
Contract Professional, BP Products North America: 2000 –2002
Scientist, Hull & Associates, Inc.: 1996 –2000
Graduate Research Associate, The Ohio State University: 1992 –1995
Graduate Teaching Associate, The Ohio State University: 1992 –1995
Undergraduate Research Assistant, The Ohio State University: 1990 –1992

**professional affiliations**

Institute of Hazardous Materials Management
National Ground Water Association
National Brownfield Association
Indiana Society of Hazardous Materials Managers

**training and seminars**

Certified Hazardous Materials Manager (March 2004)
OSHA 1910.120, 40-Hour Hazardous Materials Safety Course (Fall 1996)
OSHA 1910.120, Eight-Hour Refresher Course (April 2005)
Conference on Petroleum Hydrocarbons and Organic Chemicals in Ground Water (1997)
Application of Health Risk Assessment for Environmental Decision Making (1999)

**professional experience**

**Contract Environmental Business Manager**

- Supervise assessment, risk evaluation, corrective action, and closure at over 120 retail petroleum underground storage tank properties with emphasis on balancing cost, remediation goals, and reputation. Responsibilities include interaction with regulators, legal community, and local stakeholders to gain acceptance of property life-cycle management strategies; and engaging consultants and subcontractors to understand and practice health, safety, and environmental expectations. Participated on integration and transition team formed to align three major oil companies for consistent reputation processes and metrics.

**Site Assessment and Emergency Response**

- Installed soil borings and collected soil and ground water samples to evaluate the distribution of a spilled solvent at a chemical storage facility. Supervised the installation of soil vapor extraction wells, and assisted in the installation of a soil vapor extraction system.

**Hydrogeologic Investigation**

- Supervised the installation of soil borings/monitoring wells, collected soil and groundwater samples, and conducted slug tests for an Ohio Voluntary Action Program Phase II Property Assessment at an aluminum smelting plant.

**professional experience cont.**

**Contaminant Fate and Transport**

- Modified an existing High-Performance Liquid Chromatography procedure to evaluate biodegradation and sorption of a widely-used herbicide in saturated soils under differing oxidation-reduction states.

**Phase I Property Assessment**

- Researched a comprehensive site history; contacted regulatory agencies; performed a property walkover and interviewed past and present employees; reviewed aerial photographs, real estate records, and environmental database reports; and prepared a Phase I investigation report for a metal plating and lighting manufacturing facility in operation for over 50 years.
- Researched previous land use; contacted regulatory agencies; performed a property walkover and interviewed present employees; reviewed aerial photographs, real estate records, and environmental database reports; and prepared a Phase I investigation report for a metal processing facility.
- Contacted regulatory agencies; reviewed aerial photographs, real estate records, and environmental database reports; performed site walkover; and completed a Phase I investigation report for a property adjacent to an operating gasoline service station in anticipation of a property transfer.
- Contacted regulatory agencies; reviewed real estate records and environmental database reports; and assisted in the completion of a Phase I investigation report for a soap manufacturing facility. Supervised the installation of soil borings and collected soil and ground water samples as part of a Phase II Property Assessment.

**Hydrogeologic Investigations at Underground Storage Tank Sites**

- Performed numerous hydrogeologic investigations at UST sites to define the extent of petroleum hydrocarbons in soil and ground water. Specific tasks have included cost estimate and work plan preparation, field supervision of drilling, and soil sampling. Field supervised ground-water sampling, evaluated chemical analyses, prepared reports, and made recommendations based upon investigative results.

**RCRA Investigation/Closure**

- Completed a Phase II Investigation at a former wiring harness manufacturing facility. Supervised the installation of soil borings and the collection of soil and ground-water samples to evaluate the distribution of organic solvents in the vicinity of a former drum storage area. Supervised the excavation and proper disposal of a large volume of impacted soils, and the placement of clean backfill material, to achieve closure in preparation for a property transfer.

**Hydrogeologic Investigation/Redevelopment of Commercial & Industrial Property**

- Completed a Phase II Investigation at a set of dry cleaning/gasoline station/automotive service parcels. Supervised the installation of soil borings and the collection of soil and ground-water samples to evaluate the distribution of organic solvents, metals, and petroleum hydrocarbons. Supervised the excavation and proper disposal of impacted soils, and the placement of clean backfill material, to support redevelopment of the parcels into a Fire Station facility. Managed the generation of bid documents for remedial activities, preparation of a Storm Water Pollution Prevention Plan, coordination of environmental excavations and geotechnical pre-construction site preparation, and the design of a sub-slab venting system to preclude the potential intrusion of vapors into interior spaces.

# Brent A. Graves, PG

Senior Project Manager

*Mr. Graves is a Professional Geologist with over 18 years of experience in environmental consulting. His responsibilities have included conducting hydrogeologic investigations for solid waste disposal facilities, petroleum underground storage tank facilities, industrial and manufacturing facilities, and for water supply availability. Other responsibilities have included preparing three-dimensional models of site stratigraphy, groundwater flow and contaminant transport modeling, and evaluating and conducting statistical analyses on groundwater analytical results for solid waste disposal facilities.*

**education**

Bachelor of Science, Geology, Indiana University Purdue University Indianapolis, 1988

**professional work history**

Project Manager, Hull & Associates, Inc.: 2002 – present
Hydrogeologist IV, Andrews Environmental Engineering, Inc.: 1997 –2002
Hydrogeologist, Hull & Associates, Inc.: 1990 –1997
Hydrogeologist, Bennett & Williams, Inc.: 1988 –1990

**training and seminars**

OSHA 1910.120, 40-Hour Hazardous Materials Safety Course (1988)
OSHA 1910.120, Supervisors Safety Training Course (1989)
OSHA 1910.120, Eight-Hour Refresher Course (2002)
Groundwater Pollution and Hydrology, The Princeton Course (1995)
PC Applications in Risk Assessment, Remediation, Modeling, and GIS, NGWA (2000)
Applied Ground Water Statistics for Landfills Course (1997)
ASTM Risk Based Corrective Actions Course (1997)
Respirator Fit Test (2005)
First Aid/CPR Training (2006)

**professional affiliations**

American Institute of Professional Geologists, CPG-9940
Licensed Professional Geologist, Indiana, LPG -1832
Licensed Professional Geologist, Illinois, LPG-196-000840

**professional experience**

**Emergency Response**

- Supervised the delineation of groundwater impacts associated with a recent 7500 gallon diesel fuel release from an AST. Subsequently designed and supervised the installation of a recovery system.
- Supervised the installation of a trench at a closed gas station due to the discovery of LNAPL in utility lines. Conducted subsequent investigation to define the extent of impact.
- Supervised the removal of over 400 drums containing various wastes illegally dumped at a sanitary landfill.

**Hydrogeologic Investigations**

- Managed a hydrogeologic investigation at a solid waste landfill to determine the source of contaminants in a site monitoring well. Utilizing a phased approach, four potential source areas were investigated via the collection of surface water, groundwater and leachate samples. A source area was determined, which was investigated further by conducting a geophysical survey utilizing EM conductivity, and installing soil borings to confirm the geophysical survey results. The investigation was successful in determining the exact location of the contaminant source.
- Managed a focused hydrogeologic investigation to supplement a previous Phase II ESA, which discovered chlorinated VOCs in one corner of a property being acquired by the client. The focus of the investigation was to determine the source of the VOCs. Based on the direction of groundwater flow and the distribution of VOC concentrations he determined that the source of the VOCs was located off-site. The state subsequently issued a comfort letter to the client stating that they were not responsible for the VOCs detected on their property.

**professional experience cont.**

- Managed the hydrogeologic aspects of an investigation of a solid waste landfill that also included geochemical analyses and modeling conducted by an associate. The investigation was conducted to demonstrate that elevated metals concentrations in the groundwater at two monitoring wells is naturally occurring and not caused by the landfill. Utilizing analytical results for soil and bedrock samples and indicator parameters measured in the groundwater at the wells of concern, a geochemical model was prepared. The model results indicated that the metals concentrations detected in the wells could be a result of natural leaching processes given the conditions in the subsurface at the wells of concern. The state subsequently accepted the demonstration.
- Prepared a hydrogeologic investigation report for a proposed 58-acre lateral expansion of a sanitary landfill. He compiled all pertinent hydrogeologic data to prepare cross-sections of subsurface stratigraphy, cross-sections depicting groundwater flow patterns and the interaction between surface water bodies and the uppermost aquifer and potentiometric surface maps depicting groundwater flow direction and hydraulic gradients. He composed a detailed narrative discussing the above mentioned aspects of the site-specific hydrogeology as well as information relating to the regional hydrogeologic setting.

**Contaminant Fate and Transport**

- Participated in updating the wellhead protection area delineation for the City of Speedway by revising and entering input data, running computer simulations utilizing MODFLOW/PMPATH, and providing output results for the delineation report. Responsible for providing quality assurance reviews of input and output data.

**Phase I Environmental Site Assessments**

- Researched comprehensive site histories; contacted regulatory agencies; performed property walkovers and interviewed past and present property owners; reviewed aerial photographs, real estate records, and environmental database reports; and prepared a Phase I ESA report for five adjoining properties to be purchased by the local Community Development Corporation. All work was conducted in accordance with the most current ASTM Standard.

**Hydrogeologic Investigations at Underground Storage Tank Sites**

- Performed numerous hydrogeologic investigations at UST sites in Indiana, Ohio, West Virginia, and Pennsylvania to define the extent of petroleum hydrocarbons in soil and groundwater. Tasks have ranged from providing supervision of field activities (drilling, soil/groundwater sampling, and GPR surveys) to project management.

**Solid Waste Monitoring and Reporting**

- Managed the semi-annual groundwater sampling and reporting for four landfills in Indiana. For each site laboratory results were thoroughly evaluated to determine the presence of possible laboratory errors. Statistical analyses were conducted on the analytical results to determine if any parameters exhibited a significant increase in concentration from the previous event. When a significant increase was indicated for a parameter, recommendations were made regarding how to address it. Reports, consisting of a narrative, potentiometric surface map, statistical analysis summary tables and graphs, and laboratory analytical results, were subsequently prepared and submitted to the state.

# Brent A. Graves, PG

Senior Project Manager

**professional experience cont.**

**RCRA Investigation/Closure**

- Managed the hydrogeologic portion of a Phase II ESA to address several recognized environmental conditions that had been discovered during previous Phase I ESAs. The hydrogeologic investigation included the collection of surface soil, subsurface soil and groundwater samples. Monitoring wells were utilized for performing slug tests to evaluate horizontal hydraulic conductivities, determine groundwater flow direction and calculate vertical and horizontal hydraulic gradients. All samples were subsequently analyzed for multiple contaminants of concern and the results compared to regulatory limits. Prepared the hydrogeologic portion of the report.
- Managed the investigation of subsurface soils at a manufacturing facility dealing in special metal alloys to determine the source and extent of chlorinated solvent contamination. Prepared a work plan, installed soil borings for the collection of soil samples, evaluated analytical results, and prepared a report. Recommendations were also made to the client to address areas of the site in which the extent of impact had not been fully defined.

# Kara A. Allison, APR

Government and Community Relations Practice Leader

*A specialist in media strategy, crisis communications and media training, as well as state and federal environmental policy and legislative issues, Ms. Allison builds credibility with legislators, government officials, municipalities, community groups and reporters by helping them understand the various environmental issues associated with development projects. She routinely provides media counsel and shares her in-depth regulatory, legislative and program knowledge with staff and clients.*

**education**

Bachelor of Arts, Journalism, Ohio Wesleyan University, 1995
(Concentrations in Politics and Government; Humanities and Classics)

**professional work history**

Government and Community Relations Practice Leader, Hull & Associates, Inc.: 2004 – present
Public Information Officer, Ohio Environmental Protection Agency: 1999 – 2004
Public Relations and Marketing Manager, Gooseberry Patch Co.: 1998 – 1999
Reporter, Suburban News Publications: 1996 – 1998
Freelance Writer and Copy Editor: 1996 – present
Media Specialist, The Chocolate Gourmoo: 1995 – 1999 (seasonal)

**professional accreditation/ organizations/ registrations/**

| | |
|---|---|
| Accredited in Public Relations (APR) | Public Relations Society of America |
| PRSA, Central Ohio Chapter | Ohio Women in Government |
| National Brownfield Association | National Solid Wastes Management Association |
| Registered Lobbyist, State of Ohio | Registered Lobbyist, State of Indiana |

**professional accomplishment /honors**

Central Ohio PRSA Board of Directors (2006)
Elected President of Ohio Women in Government (2005)
2006 Chair and 2005 Secretary/Treasurer of PRSA's Environmental Section
Governor's Appointment to Ohio's Small Business Environmental Compliance Assistance Council (2004)
Developing Excellent Agency Leaders, Ohio EPA's leadership and management program (2004)
Winner of the 2001 George B. Garrett Professionalism Award, Ohio EPA's highest award for professional excellence

**professional experience**

**Media Relations/Risk Communications**

- Specialize in media strategy, crisis communications and media training.
- Maintain regular contact with numerous media outlets, including environmental and business reporters.
- Advise clients and staff on preparing for and responding to media inquiries and generating coverage for specific projects.
- Write communications plans for clients, and oversee preparation and distribution of company news releases.
- Participated in more than 100 public meetings on a wide scope of environmental issues, including brownfield redevelopment, wetland 401 certifications, landfill siting and permitting, hazardous waste permitting, urban setting designations, air permitting, and other site-specific meetings.
- Served as chief spokesperson for Ohio EPA's Northeast district, and supported other districts around the state. Responded to local, state and national media regarding all Ohio EPA programs and divisions, including some of the agency's most widely reported and contentious issues.
- Designed and helped implement a marketing plan for Ohio EPA's Public Interest Center, as well as an extensive 8-hour media relations training program for Ohio EPA staff. Conducted media training for approximately 70 staff members between May 2003 and February 2004.
- Participated as a crisis communications coordinator in several emergency drills, including the Northeast Ohio Area Exercise on Lake Erie, 2000; and the Davis-Besse nuclear power plant drill, 2001.

**professional experience cont.**

- Responded to numerous crisis and emergency situations, serving as Ohio EPA's key spokesperson during and following the incident. Major incidents included the John Mercer property drum removal action, fall/winter 2000-2001; Buckeye Egg Farm Licking County tornado, October 2000; the North Canton well field contamination/sabotage event, June 2001; American Landfill receipt of hazardous waste incident, August 2002; consent order agreement and underground construction and demolition debris landfill fires at Warren Recycling, summer 2003; Northeast Ohio flooding and emergency evacuations, July 2003; the Northeast Ohio blackout, August 2003; and the Garfield Alloys factory explosion, December 2003, among many others.

**Policy/Government Relations**

- Lead Hull's Government and Community Relations Practice.
- Sustain Hull's continued involvement in supporting legislation and policy development through active lobbying efforts, including advancing statewide brownfield grant funding initiatives in Ohio and Indiana.
- Experience working with federal, Ohio, Indiana and Maryland legislators and liaisons; U.S. EPA staff; Ohio EPA staff; Indiana Department of Environmental Management staff; Maryland Department of the Environment staff; Ohio Attorney General's office representatives; Ohio Department of Development staff; Indiana Finance Authority representatives; and numerous county, city and other local government officials and representatives.
- Represent Hull on professional boards, committees and associations, including the Legislative and Policy committees of the Ohio and Indiana chapters of the National Brownfield Association; the Ohio Chamber of Commerce's Energy and Environment Committee; the Ohio Manufacturers' Association's Environment Committee; Ohio Women in Government's Steering Committee; PRSA's Environmental Section; PRSA's Strategic Social Responsibility Section; PRSA Central Ohio Chapter's Programs Committee; and the National Solid Wastes Management Association.

**Community Relations/Grant Writing**

- Work with communities across the Midwest to identify potential funding opportunities at the state and federal levels to assist clients in securing grants or loans for projects.
- Research and gain knowledge of new federal, state and regional funding opportunities and how the programs work.
- Assist Hull's funding and planning team in preparing applications and grants for various federal and state funding programs, including U.S. EPA Brownfield grants and the Clean Ohio Fund.

**presentations/ published environmental articles/reports**

"Leveraging Federal Funds for Brownfields," Land Development Council of Northern Kentucky, May 2006

"Public Relations Strategies for Main Street Communities," Heritage Ohio Main Street Institute 2006, February 2006

"It's an Environmental Emergency: Is Your Company Ready?" *PRSA* 2005 International Conference presentation, Miami, FL, October 2005
"Indiana Brownfields," Redevelopment Association of Indiana, September 2005

"Case Study – Tackling Chemical Agents in Ohio," *On the Environmental Horizon*, Fall 2004 (co-authored with Kimberlee Turner, U.S. Army Corps of Engineers)

"Unearthing the Past – An Environmental Case Study in Managing Your Message When It's Not Good News," *PRSA* Teleseminar, August 2004

"Singing the SWACO Blues: Six years after shutting down the dioxin-belching Trash Burning Power Plant, the Solid Waste Authority is still struggling to find tenants for the site," *Columbus CEO Magazine*, November 1999

# James P. Hogan

Project Manager

*Mr. Hogan has worked extensively on several projects in Ohio and Indiana governed by Ohio BUSTR, PUSTRCB, and VAP and Indiana LUST, ELTF, SCP, and VRP. He has also conducted work for the United States DOE while at the Southwest Research Institute Center for Nuclear Waste Regulatory Analyses (CNWRA). He has over 10 years experience in several sub-disciplines of geology, rock fracture analysis, financial management, technical writing, and GIS.*

**education**

Master of Science in Geology, The University of Tennessee, 2000
Bachelor of Science in Geology, The University of Dayton, 1996

**professional work history**

Project Manager, Hull & Associates, Inc.: 2004 – present
Hydrogeologist II, Hull & Associates, Inc.: 2002 – 2004
Hydrogeologist I, Hull & Associates, Inc.: 2000 – 2002
Structural Geologist, Southwest Research Institute, Center for Nuclear Waste Regulatory Analyses: 1998
Graduate Teaching Assistant, Department of Geological Sciences, The University of Tennessee: 1997 – 1999

**training and seminars**

Environmental Forensics Seminar (2003)
TBA/MTBE Remediation Seminar (2003)
2003 NGWA Conference on Remediation: Site Closure and the Total Cost of Cleanup (2003)
OSHA 29 C.F.R. 1910.120, 40-Hour Hazardous Materials Safety Course (2000)
OSHA 29 C.F.R. 1910.120, 8-Hour Annual Hazardous Safety Course Refresher (2001 – 2006)
BP GLOBAL Alliance Safety Passport (for BP direct contractors) (2002-2006)
Adult, Child, and Infant CPR (2003, 2006)
Standard First Aid (2003, 2006)

**professional experience**

### Project Management

- Mr. Hogan is currently employed as a project manager and is directly responsible for managing a portfolio of sites amounting to approximately $1,400,000 in corrective action costs annually. His portfolio includes the largest groundwater remediation project in the State of Indiana.
- In addition, Mr. Hogan serves an important role of assisting senior project management with advocacy and strategy for producing long-term liability reduction on a large multi-state multi-million dollar portfolio. He also currently serves as a key resource and client point of contact for financial data management of a $5,500,000 portfolio in Indiana.

### Technical Background

- Mr. Hogan is a Licensed Professional Geologist in the State of Indiana. He has over 10 years experience in several sub-disciplines of geology, rock fracture analysis, financial management, technical writing, and GIS. He has successfully applied several soil and groundwater models to aid clients in environmentally safe corrective action closures. His graduate education provided a basis for his expertise in structural geology, geophysics, tectonics, stratigraphy, petrology, and geologic mapping.
- He is an effective technical writer and has provided several internal and external technical reviews, including technical reviews for BUSTR (Bioscreen Modeling Fact Sheet) and IDEM (LUST report templates).

### Regulatory Knowledge

- Mr. Hogan has worked extensively on several projects in Ohio and Indiana governed by Ohio BUSTR, PUSTRCB, and VAP and Indiana LUST, ELTF, SCP, and VRP. He has also conducted work for the United States DOE while at the Southwest Research Institute Center for Nuclear Waste Regulatory Analyses (CNWRA).

# James P. Hogan

Project Manager

**project highlights**

**Fuel Terminal Remediation Project**

- Mr. Hogan successfully balances the interests of the client, the governing authority, and the public community in all his projects. These qualities are best exemplified through his management of a large complex remediation project at a petroleum bulk terminal and pipeline site near South Bend, Indiana. The project has a vast environmental remediation history that began in 1976 and is the largest groundwater remediation project in the State of Indiana. He serves as the technical lead for continued assessment and remediation of the several known petroleum plumes and one large chlorinated plume that together have impacted groundwater supplies at over 100 residential and business drinking water wells. Mr. Hogan has helped stabilize public scrutiny of the project while directing a technically defensible cleanup strategy that will re-focus the remediation scope and noticeably reduce the $750,000 annual budget by advocating numerous remediation system engineering enhancements, building a solid working relationship with the regulatory agency and the local business community, and reducing the scope of work for a complex groundwater monitoring program that includes accessing and/or sampling over 300 wells quarterly.

**Computing and Financial Analysis for Petroleum UST Sites**

- Mr. Hogan has developed innovative financial tools for clients to track spend and evaluate large portfolios of several UST projects on an annual and multi-year basis. He has also developed a cost estimator tool to standardize assessment and remediation cost estimates.

**Yucca Mountain Fracture Mapping Project**

- As an intern, Mr. Hogan conducted a fracture mapping project for the Southwest Research Institute's Center for Nuclear Waste Regulatory Agency at Yucca Mountain, Nevada on a volcanic tuff pavement exposure using RT-2 GPS technology and created a database to record critical fracture parameters such as fracture size, aperture and strike/dip of major fractures. The investigation was part of a larger investigation aimed at determining travel time for precipitation to reach a proposed high-level nuclear waste facility via fracture connectivity of numerous layers of volcanic tuff.

**licensing**

Licensed Professional Geologist in Indiana, License #2166

**professional affiliations**

Geological Society of America, 1997 – Present
National Groundwater Association, 2001 – Present
Indiana Geological Society, 2004 -- Present

**publications and presentations**

Hogan, J.P., and Mustafaga, D.B., 2003. Analysis of Lifecycle Costs for Petroleum UST Sites in Ohio: Lessons Learned on How to Reduce Environmental Cleanup Expenditures. *Proceedings:* NGWA Conference on Remediation: Site Closure and the Total Cost of Cleanup, November 13-14, 2003/Convention Center Hampton Inn/New Orleans, Louisiana: New Orleans, LA, pp. 249-262.

Hull, J.H., Mustafaga, D.B., and Hogan J.P., 2003. Evaluating Lifecycle Costs and Meeting Clean-up Goals at Petroleum-Release Corrective Action Sites. *Insert in* UST Pipeline Newsletter, April 2003, Petroleum Underground Storage Tank Release Compensation Board, http://www.petroboard.com/newsletter.htm.

Hogan, J.P., 2000. Calculation of Shortening Due to Outcrop-scale Deformation and Its Relation to Regional Deformation Patterns, A Thesis Presented for the Master of Science Degree, The University of Tennessee, Knoxville.

Hogan, J.P., and Dunne, W.M., 1999. Using outcrop-scale deformation to complete the shortening 'picture' and detect regional deformation patterns. GSA Abstracts with Programs, 31, 7.

Hogan, J.P., and McGrew, A.J., 1997. Synkinematic deformation and evolution of 29 Ma monzogranite in the East Humboldt Range, Elko County, Nevada: GSA Abstracts with Bulletins, 29, 4.

# Ryan M. France

Scientist II

*Ryan France has 8 years of experience in the environmental consulting field and his involvement has covered a variety of projects. He has worked extensively with site investigations, RISC investigations, ground water sampling, remediation system installation and O&M, and on a number of UST installations and closures.*

**education**

Bachelor of Biology, Marian College, 1999

**professional work history**

Scientist II, Hull & Associates, Inc.: 2002 - present
Environmental Scientist, Civil & Environmental Consultants: 2001 – 2002
Environmental Scientist, August Mack Environmental: 2001
Environmental Scientist, Supreme Environmental Service Co.: 1998 – 2000

**training and seminars**

40 hr. Hazardous Waste Training 29 CFR 1910.120
8 hr. Hazardous Waste Training Refresher
Asbestos Bldg. Inspector, (2001)
Asbestos Bldg. Inspector Refresher, (2005)
10 hr Occupational Safety and Health Training, (1999)

**professional experience**

### Site Assessment

- Involvement in over 200 site assessment projects. Responsible for coordinating with drilling contractor, collecting soil and/or groundwater samples, data interpretation, and generation of reports.
- Completed Initial Site Characterization (ISC), Further Site Investigation (FSI), and Corrective Action Plan (CAP) reports.
- CAP initiatives involved such remedial methods as excavation, monitored natural attenuation (MNA), Air Spare (AS), Soil Vapor Extraction (SVE), Enhanced Fluid Recovery (EFR), low-flow sampling, and obtaining Environmental Restrictive Covenants (ERCs).
- Involved with Mann-Kendall analysis data for sites.

### Brownfield Investigations

- Involved in over 15 brownfield projects throughout the state of Indiana.

### Remedial Systems

- Worked on several AS and SVE remedial system installation/O&M projects. Responsibilities included installation of system piping, assistance with system design, start up of systems, and general operation and maintenance of systems once operating.
- Installed and monitored AS system at a County Highway Department to remediate soil and groundwater from former leaking Underground Storage Tanks (USTs).
- Installed and monitored SVE system at former gasoline service station to remediate soil and groundwater from former leaking USTs.

### UST Install/Removal

- Involved in a variety of UST removals and installations.
- Took part in supervision of UST install/removal work, collection of samples from tank cavity, and generation of UST closure reports.

### Air Management

- Involved in air management projects including, stack testing, industrial hygiene sampling, and asbestos abatement oversight.
- Conducted industrial hygiene sampling at an office complex near Chicago in order to determine air quality.

# Ryan M. France

Scientist II

**Asbestos Survey**

- Completed asbestos survey and sampling at a 1-million square foot auto manufacturing facility, as well as at multiple smaller closed petroleum retail facilities.
- Involved in asbestos abatement oversight in Southern Indiana at a concrete facility. Oversight of asbestos abatement workers while refractory brick was removed from drying kilns. Responsible to taking air monitoring samples while work was ongoing as well as collecting air clearance samples once work was complete.

# Jason Oland, CHMM

Scientist II

*Mr. Oland is a Scientist II focusing on UST removal and installation, site assessment, soil and groundwater remediation and report writing. His experience also includes designing soil and groundwater sampling plans at several leaking underground storage tank sites.*

**education**

Bachelor of Science, Fisheries and Aquatic Sciences, Purdue University, 1991

**professional work history**

Scientist II, Hull & Associates, Inc.: 2003 - present
Scientist I, Hull & Associates, Inc.: 2002 - 2003
Chemist, Indianapolis Zoo: 1991-1998 and 2000 - 2002
General Manager, Wilder Oil Company, Inc.: 1998 – 2000

**certifications**

International Fire Code Institute Certification No. 1104193-26, UST Decommissioning (1998)
International Fire Code Institute Certification No. 1104193-25, UST Installation/Retrofitting (1998)

**training and seminars**

OSHA 1910.120, 40 – Hour Hazardous Waste Operations and Emergency Response course (2002)
MTBE Remediation Seminar (2002)
Advanced Hazardous Material Management Course (2005)

**professional experience**

**UST Removal and Installation**

- Supervised removals and installations of underground storage tanks through completion.

**Site Assessment**

- Designed soil and groundwater sampling plans at several leaking underground storage tank sites in accordance with Indiana Department of Environmental Management guidelines.
- Installed groundwater monitoring wells and soil borings at leaking underground storage tank sites.

**Soil and Groundwater Remediation**

- Managed on and off-site Land Treatment remediation program for petroleum contaminated soils. Designed and installed soil vapor extraction system at UST site.
- Performed pilot testing to determine the efficacy of remedial options at leaking underground storage tank sites.
- Proposed and implemented several Corrective Action Plans for the remediation of petroleum contaminated soil and groundwater – Monitored Natural Attenuation, soil excavation and disposal, soil vapor extraction, enhance fluid recovery, in-situ remediation, recovery trench, and groundwater treatment systems.

**Subcontractor Management**

- Request proposals, make selection and coordinate fieldwork of subcontracted employees.

**Health and Safety**

- Develop several Site Health and Safety plans, and Job Safety Analyses for staff and subcontractor use.

**Report Writing**

- Have written various technical papers pertaining to environmental investigations of leaking underground storage tank sites – Initial Site Characterizations, Underground Storage Tank Removal Reports, Abatement Reports, Further Site Investigations, Corrective Action Plans, and No Further Action Submittals.

# Sarah E. Webb

Hydrogeologist I

**education**

Bachelor of Science, Geology, Indiana-Purdue University, 2001
Master of Science, Geology, West Virginia University, 2003
Thesis Title: "Numerical Analysis of Source-Water Dynamics for Stream-Bounded Alluvial Aquifers"

**professional work history**

Hydrogeologist I, Hull & Associates, Inc.: 2004 – present
Research Assistant, West Virginia University: 2001 – 2003
Hydrogeologic Technician, Summit Risk Services, Inc.: 1998 - 2001
Field Technician, Indiana Department of Environmental Management and the Office of the Indiana State Chemist: 1998 – 2000

**professional affiliations**

National Ground Water Association

**certifications**

40 Hour OSHA HAZWOPER Certification

**training and seminars**

Environmental Due Dilligence in the Age of All Appropriate Inquiry (2006)
Exploring Statewide GIS Resources (2006)
Vapor Intrusion Webinar (2005)

**professional experience**

**Hydrogeological Investigations**

- Hydrogeologist responsible for the formulation of geochemical models simulating municipal waste landfill leachate to groundwater mixing (Northern Ohio).
- Hydrogeologist responsible for the formulation of groundwater flow models representing the groundwater-surface water interaction near the and it's impact on contaminant migration in the subsurface (Lake Erie coast, Northern Ohio). Simulations also employed forward particle tracking models.
- Hydrogeologist responsible for MNA simulations at chlorinated solvent and VOC impacted sites using BIOSCREEN and BIOCHLOR (Northern Ohio).

**Geographic Information Systems (GIS)**

- Hydrogeologist responsible for incorporating three BP Terminal Facilities into GIS. Integration included the following: full GPS location and elevation surveys, differential correction of collected GPS field data, reduction of all surveyed elevation data, and creation of site-specific Geodatabases combining up-to-date field data with the most recent CADD drawings. Each GIS was then used for mapping, data management, and data analysis for each individually facility.

**MNA Groundwater Sampling and Analysis**

- Collected groundwater samples and performed field and bench geochemical analyses for monitored natural attenuation parameters. Reduced associated data for graphical presentation in reports to the State of Indiana.

**Groundwater/Soil Sampling**

- Collected groundwater and soil samples from UST sites.

**Well Installation/Soil Boring**

- Installed monitoring wells and soil borings at operational and closed gasoline stations and former municipal waste landfills.

# Ryan Sievers

Scientist I

**education**

Bachelor of Science, Environmental Policy, Indiana-Purdue Fort Wayne, 2006

**professional work history**

Scientist I, Hull & Associates, Inc.: 2004 – present

**training and seminars**

Annual OISHA Safety Training
Licensed Pesticide Technician

**professional experience**

**Groundwater Sampling**

- Collect groundwater samples by conventional (bailing, etc.) methods and through use of specialized low-flow sampling techniques. Coordinate sampling efforts with team of samplers; promote and evaluate use of health & safety requirements during field and office work; manage invoicing and chain-of-custody issues between Project Managers and laboratories.

**UST Closures**

- Collect soil samples to meet regulatory requirements; supervise excavation/UST removal subcontractors; manage health & safety aspects of project; and coordinate soil and water disposal with disposal facilities, waste transporters, and subcontractors.

**Corrective Action Implementation**

- Collect soil samples to meet regulatory requirements; supervise excavation subcontractors; direct implementation of alternative technologies (e.g., gypsum to enhance biodegradation) during corrective action; manage health & safety aspects of project; and coordinate soil and water disposal with disposal facilities, waste transporters, and subcontractors.

**Groundwater Contaminant Trend and Natural Attenuation Analysis**

- Conduct historical data evaluation to evaluate ability of saturated unit to naturally attenuate groundwater. Involves use of statistical methods (e.g., Mann-Kendall trend analysis) and quantification of biogeochemical parameters (e.g., nitrate, sulfate, iron, etc.).

**Report Writing**

- Prepare reports to document sampling procedures; present groundwater, UST closure, drilling and excavation results; and provide recommendations for site assessment, remediation, and closure options.

# Casey McFall

Scientist I

**education**

Bachelor of Science, Biology and Germanic Studies, Indiana University, 2005

**professional work history**

Scientist I, Hull & Associates, Inc.: 2005 – present
Lab Technician, Indiana Center for Vascular Biology and Medicine: 2002 – 2005
Resident Assistant, McNutt Residence Hall, 2003-2004

**professional experience**

**Groundwater Sampling**

- Collect groundwater samples by conventional (bailing, etc.) methods and through use of specialized low-flow sampling techniques. Coordinate sampling efforts with team of samplers; promote and evaluate use of health & safety requirements during field and office work; manage invoicing and chain-of-custody issues between Project Managers and laboratories.

**UST Closures**

- Collect soil samples to meet regulatory requirements; supervise excavation/UST removal subcontractors; manage health & safety aspects of project; and coordinate soil and water disposal with disposal facilities, waste transporters, and subcontractors.

**Drilling**

- Collect soil samples; log boreholes and evaluate hydrogeology of site; evaluate appropriate monitoring well construction (e.g., screen lengths, depths) and detect drilling subcontractors as required to adequately assess hydrogeology of site; survey wells for elevation data; coordinate subcontractors and manage health & safety aspects prior to, during, and after drilling activities.

**Corrective Action Implementation**

- Collect soil samples to meet regulatory requirements; supervise excavation subcontractors; direct implementation of alternative technologies (e.g., gypsum to enhance biodegradation) during corrective action; manage health & safety aspects of project; and coordinate soil and water disposal with disposal facilities, waste transporters, and subcontractors.

**Groundwater Contaminant Trend and Natural Attenuation Analysis**

- Conduct historical data evaluation to evaluate ability of saturated unit to naturally attenuate groundwater. Involves use of statistical methods (e.g., Mann-Kendall trend analysis) and quantification of biogeochemical parameters (e.g., nitrate, sulfate, iron, etc.).

**Report Writing**

- Prepare reports to document sampling procedures; present groundwater, UST closure, drilling and excavation results; and provide recommendations for site assessment, remediation, and closure options.

# Edvins Joniskan, LPG

*Senior Project Manager*

## FIELDS OF COMPETENCE

- *Groundwater/soil remedial investigations and closures*
- *UST compliance*
- *Environmental risk management*
- *Indiana environmental regulations*

## CREDENTIALS

- *BA - Geology, Indiana University*
- *Certificate of Executive Management, University of Notre Dame*
- *OSHA Health & Safety Training with annual 8-hour refreshers*
- *Licensed Professional Geologist – Indiana, LPG #1817*
- *State of Indiana, Department of Environmental Management - Environmental Impact Award – (July 1994). Edvins was awarded this honor for personal commitment and self initiative in publishing the Underground Storage Tank Branch Guidance Manual.*
- *State of Indiana, Department of Environmental Management - Environmental Impact Award Nomination (September 1995). Edvins was nominated by his peers for accomplishing assigned duties, demonstrating skill and initiative in devising and improving work methods.*

## LANGUAGES

- *English – native*
- *Latvian - fluent*

*A member of* Inogen Environmental Alliance

## EXPERIENCE SUMMARY

Edvins Joniskan is a Senior Environmental Project Manager for Delta Environmental Consultants, Inc. Edvins maintains a professional license as a geologist in Indiana and has more than 16 years of experience, in part, as a regulator and as a project manager of remedial investigations and closures. His responsibilities include applying streamlined site investigation strategies, effective remedial solutions, and supervising resource allocations and project finances. In addition, he provides technical and regulatory support for a multi-million dollar multidisciplinary client, as well as, applies his extensive experience in developing and maintaining regulatory compliance initiatives.

While gaining experience as a state regulator, Edvins ensured that all owners and operators of USTs comply with the requirements for reporting, investigating and cleaning up releases of petroleum and hazardous substances from UST systems pursuant to Indiana Code 13-23 and Indiana Administrative Code 329 IAC 9. He gained additional experience in integrating environmental risk management decisions while determining project closure alternatives during his tenure with the State of Indiana's Voluntary Remediation Program, which in turn, encouraged property redevelopment.

Edvins gained additional project experience by supporting US EPA lead investigations surrounding a municipal water supply by identifying types and concentrations of groundwater contaminants in vicinity of the well field capture zone which constituted approximately four square miles. Contaminant concentrations, primarily industrial solvents, in water drawn from the impacted well field often exceeded maximum contaminant levels (MCL's). Edvins provided input on sample network design and rationale for investigating all potential contaminant sources, worked alongside US EPA representatives, and assisted in providing support for several alternatives to the groundwater contaminant presented to city officials.

## RELATED PROJECTS

Edvins focuses his current effort on providing senior project management and oversight of field investigation and corrective action measures for Delta projects. As a senior project manager, Edvins manages investigation and remediation aspects of specific projects and tracks progress against financial and time schedule requirements. He writes external reports to meet company, client, and regulatory requirements. Additionally, he prepares work scope proposals, and subcontractor bid documents; secures new work; arranges and oversees contractors; and reviews proposals, work plans, designs, and the associated analytical data.

Edvins supervises administrative and technical staff and assists in achieving office and company wide health and safety performance goals. During the past fifteen years, some of the specific project tasks Edvins has completed include the following:

- Acted as project manager on numerous projects with subsurface impacts in Indiana. Projects ranged from initial investigation through remediation and closure phases.
- Supported business operations for a major oil company with petroleum impacted, marketing retail service stations in Indiana. Developed state and client specific liability reduction strategies focusing on risk based site closure mechanisms for total program cost reduction.
- Acted as project manager for two bulk petroleum terminal investigations for a major oil company. Work scopes addressed ecological and human health exposure pathway evaluations, maintenance of point of use filter systems, LNAPL recovery, dissolved petroleum phase delineation, and a groundwater treatment trench installation.

## Edvins Joniskan, LPG

*Senior Project Manager*


### PRESENTATIONS AND PUBLICATIONS

- *State of Indiana, Underground Storage Tank Branch Guidance Manual - October 1993 & October 1994, Chief Writer and Editor*
- *State of Indiana, Voluntary Remediation Program Resource Guide - October 1995 & July 1996, Chief Editor and Contributing Writer*
- *State of Indiana, Risk Integrated System of Closure (RISC) User's Guide (Published February 2001) Chief Editor and Contributing Writer for Remediation Services Branch Program RISC User Guide*
- *http://www.in.gov/idem/land/risc/index.html*
- *Chief Writer of RISC User's Guide - Chapter 4 Voluntary Remediation Program*

- Acted as project manager for a manufacturing facility cleanup involving TCE-impacted soils in a former waste water settling pond and the recovery of free phase machine oils. The scope of work included installation of LNAPL recovery systems and coordination with local officials for TCE impacted soil removal.
- Acted as project manager for a former manufactured gas plant cleanup that required demolition of existing buildings and an investigation and removal of several coal tar storage pits. Contaminants of concern included VOCs, SVOCs, Metals and Cyanide. Coal tars were stabilized with fly ash prior to disposal at a hazardous waste landfill. Recording of a deed restriction on the property preventing future residential use and groundwater consumption successfully completed project closure activities.
- Acted as project manager for an equipment manufacturer facility cleanup that repaired cryogenic vessels, trailers, and rail cars. Work processes included handling of various petroleum lubricants, paints, acid solutions, and industrial solvents. Work scope centered on spent acid solution disposal areas, and areas with past releases of TCA.
- Acted as project manager for a metal stamping facility cleanup of wastewater settling pond sludge contaminated with arsenic, lead, silver, cadmium, and zinc. Sludge stabilization with pelletized quick lime was implemented, and the ponds were covered with a clay cover.
- Acted as project manger for a groundwater investigation surrounding a former manufacturing facility located in proximity to a municipal well field. TCE and cis-1,2-dichloroethene were detected near a former drum storage area and within sanitary sewer lines at the facility. Investigation and remediation of a storm water retention pond was performed as well.
- Participated in an US EPA and state-lead groundwater investigation centered on a municipal well field known to be impacted with TCE. Goal of investigation was to identify potential contributing sources of TCE in proximity to the well field.
- Acted as regulatory project manager for the first phase of an US EPA Brownfield Pilot project consisting of a 97-acre former slag dump site redevelopment into a community golf complex.

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# Jeff Kaestner, PE

*Senior Specialist*

## FIELDS OF COMPETENCE

- *Petroleum remediation system design, installation, operation & maintenance*
- *Closure activities associated with remediation of petroleum hydrocarbons*

## CREDENTIALS

- *BS - Civil Engineering – Southern Illinois University of Edwardsville; Edwardsville, Illinois*
- *Professional Engineer – Missouri and Kansas*
- *OSHA 40-hour Hazardous Waste Operations & Emergency Response Certification*
- *OSHA 8-hour Hazardous Waste Operations & Emergency Response Recertification*
- *Phi Theta Kappa*

## LANGUAGES

- *English – native*

*A member of* Inogen Environmental Alliance

## EXPERIENCE SUMMARY

Jeff Kaestner is a Senior Specialist for the BP Amoco Division of Delta Environmental Consultants, Inc. He has more than 12 years of practical experience in the environmental consulting field. He has provided consulting services for a wide range of environmental issues and client sectors. During his tenure at Delta his roles include Project Manager, Unit Manager, and his current role as Senior Specialist. His technical specialties include design, installation, operation & maintenance, and closure activities associated with remediation of petroleum hydrocarbons.

## RELATED PROJECTS

Mr. Kaestner has a wide variety of environmental project experience. During his professional career he has completed site assessments, asbestos surveys, corrective action pilot tests, system designs, system construction projects, and operation and maintenance activities. He has field sampling experience with soil, water, and air. He has worked on projects ranging from pre-acquisition assessments to multi-year superfund remediation.

He has a strong project management and communication skills and a demonstrated ability to accomplish a variety of complex task.

Managed corrective action projects and provide engineering services for remediation projects for petroleum clients. Duties included supervision of engineering and field services personnel responsible for performing project-related work. Also responsible for technology selection, design, agency approval, installation, and operation. Supervise emergency response efforts for product releases.

Specialized in design, construction, installation, and operation & maintenance activities associated with environmental remediation projects.

Responsible for work scope development, preparation of plans and specification, permitting, and operation of installed treatment systems.

Design experience related to environmental remediation includes recovery wells (horizontal, vertical, and trenches), piping, treatment and recovery equipment, and building enclosures.

Preparation of plans and specifications, including operations & maintenance manuals for remediation systems in multiple states.

Engineering work included strict regulatory and code requirements. Including electrical code review and waste handling practices.

Responsible for developing and performing site specific pilot test for assessing the applicability of insitu remediation technologies for major petroleum and transportation companies.

Prepared specifications for excavation and utility removal projects including site control and backfill.

Performed design task for raw material handling operations during the design of an EAF dust facility in Hamilton Ontario. This included unloading, weighing, and conveyor feed of briquette dust into a vertical shaft copula. Design included structural analysis and building modification plans. Designed and constructed a laboratory scale pilot system to test the filtering and electro-winning processes of copula off-gas.

Designed recovery system and developed operation and maintenance schedule for railroad facility in Mandan, ND. System included a series or recovery wells and trenches.

# James Cuthbertson, PE

*Senior Consutant*

## EXPERIENCE SUMMARY

Jim Cuthbertson is a Senior Specialist for Delta Environmental Consultants, Inc. Jim, a registered professional engineer, has more than 15 years of experience in remedial investigations, environmental assessments, soil and ground water remediation, and project /program management. His responsibilities include technology selection, innovative technology evaluation, remediation system design and installation, and strategic development for environmental projects from investigation to closure. He has extensive experience in the design and implementation of sulfate enhanced bioremediation, soil vapor extraction (SVE), bioslurping (dual-phase extraction), air sparging (AS), bioventing (BV), and pump-and-treat technologies.

## RELATED PROJECTS

Jim focuses his efforts on providing senior engineering and oversight of engineering for all aspects of Delta projects. As a Senior Specialist, Jim focuses on developing portfolio level strategies, supporting the management regulatory agency relationships, evaluating the remediation aspects of a project. He has written external documentation and reports to meet company, client, and regulatory requirements. Additionally, he prepares proposals and bid documents, arranges and oversees contractors, and reviews reports, proposals, work plans, designs generated by the project teams.

Jim leads the development of a Patent Pending sulfate enhanced bioremediation process. He has evaluated sites in many parts of the United States and worked with various regulatory agencies to gain acceptance of this innovative technology. Jim has been consulted to provide senior engineering support and review on potential sulfate enhanced bioremediation projects undertaken by other divisions within Delta. His support consists of reviewing the site and remediation technology to determine compatibility, followed by reviewing the design to determine whether it is both technically and economically feasible.

During the past ten years, some of the specific project tasks Jim has completed include the following:

- Designed and managed the implementation of sulfate enhanced bioremediation at more than 50 sites in Michigan, Illinois, and Indiana.
- Provided primary support for the submittal of a Patent Application for Delta's sulfate enhanced bioremediation process.
- Designed and implemented a Fenton's Reagent Pilot Study to evaluate the technical effectiveness and health and safety considerations of this technology when used to remediate free phase hydrocarbons. Results of this Pilot Study were presented at the 2002 and 2003 National Ground Water Association conferences
- Certified UST Professional (CP) involved since 1996 in a dynamic portfolio of gasoline service station sites in Michigan that has included as many as 330 sites. Over 150 site closures have been achieved.
- Oversaw the development and implementation of a revised corrective action plan at a former petroleum terminal which consisted of a sheet pile wall with an impermeable cap. The revised corrective action plan resulted in over $1,000,000 in cost savings to the client.
- Provides ongoing engineering support for installation and operation of various remedial systems at service stations and petroleum terminals.

### FIELDS OF COMPETENCE

- *Remedial investigations*
- *Environmental assessments*
- *Soil and ground water remediation*
- *Project /program management*

### CREDENTIALS

- *BS - Chemical Engineering, Michigan Technological University*
- *Professional Engineer – Michigan, Indiana, Illinois, Ohio, Pennsylvania and New York*
- *Certified UST Professional – Michigan*

### LANGUAGES

- *English – native*

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# William Pickard, LPG

*Project Professional*

## FIELDS OF COMPETENCE

- *Remedial investigations*
- *Environmental assessments*
- *Soil and ground water remediation*
-

## CREDENTIALS

- *BS - Environmental Geosciences, Purdue University, 1996*
- *Licensed Professional Geologist – Indiana (# 2141)*

## LANGUAGES

- *English – native*

## EXPERIENCE SUMMARY

William Pickard is a Project Professional for Delta Environmental Consultants, Inc. Pickard, a licensed professional geologist, has more than 9 years of experience in remedial investigations, environmental assessments, and soil and ground water remediation. His responsibilities include report writing, delegation and management of field work, and performing field work. He has extensive experience in the management of environmental reporting and remediation of hydrocarbon-impacted sites.

## RELATED PROJECTS

William focuses his efforts on meeting deliverable deadlines for all aspects of Delta projects. As a project professional, William focuses on scheduling and delegating field activities in order to complete investigation and remediation activities. He has written external documentation and reports to meet company, client, and regulatory requirements. Additionally, he prepares proposals and bid documents, schedules and oversees contractors, and reviews proposals, work plans, designs, and project-related geological and hydro-geological data.

During the past nine years, some of the specific project tasks William has completed include the following:

- Written numerous Corrective Action Plans (CAPs) utilizing various remediation technologies such as monitored natural attenuation, soil excavation, vacuum-enhanced recovery, air sparging, soil vapor extraction, and groundwater pumping and treatment.
- Helped create scope of work and oversaw field activities for an investigation at a former petroleum bulk storage terminal.
- Completed investigations and reports in the Indiana Leaking Underground Storage Tanks, Voluntary Remediation, State Cleanup, and Risk Integrated System of Closure programs.
- Performed and analyzed aquifer slug tests.
- Conducted and managed field activities and staff for large groundwater sampling project, utilizing low-flow techniques, at a Superfund site.
- Completed numerous subsurface investigations, soil borings, excavations, and monitoring well installations in various geologic settings.
- Conducted quarterly groundwater sampling of a large network of retail gasoline stations.
- Completed several Phase I environmental property assessments and reports.
- Provided QA/QC and construction oversight for the installation of a landfill liner system at a hazardous waste landfill.
- Extensive experience with construction materials testing, both in the field and in the laboratory.

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# Chad Pitcher, CHMM

*Project Manager*

## FIELDS OF COMPETENCE

- *Integrating business and environmental strategies*
- *Management of site investigation and remediation projects towards closure*

## CREDENTIALS

- *BS - Public Affairs – Environmental Science and Management*
- *University of Indiana (School of Public and Environmental Affairs – SPEA)*
- *24-Hour OSHA Health & Safety Training with annual 8-hour refreshers*
- *Certified Hazardous Material Manager*
- *Certified Environmental Inspector*
- *Certified Environmental Specialist*
- *Certified Environmental Manager*

## LANGUAGES

- *English – native*

*A member of* Inogen Environmental Alliance

## EXPERIENCE SUMMARY

Chad Pitcher is a Project Manager at Delta Environmental Consultants, Inc. He has over eight years of experience in environmental consulting acting as a project manager and health & safety leader and has over two years of experience in environmental construction as a field technician and operator. Mr. Pitcher specializes in integrating business and environmental strategies and management of site investigation and remediation projects towards closure.

## RELATED PROJECTS

Acted as project manager for various environmental due diligence projects associated with property and/or business transfers for various clients (including real estate, banks, jobbers, etc). Projects ranged in scope from Phase I and II Environmental Site Assessments to strategic consulting for evaluation of third party environmental liability assignment in support of business transactions.

Acted as a Phase I Environmental Site Assessment liaison to an environmental law firm and completed work for over 40 sites across Indiana, Illinois, Michigan, Ohio, and Kentucky.

Acted as project manager or project professional on numerous projects with subsurface impacts in Indiana. Projects ranged from initial investigation through remediation and closure phases. Activities included conducting field pilot studies and completing design of remediation systems including ground water recovery/treatment, air sparging and soil vapor extraction systems, as well as in-situ and ex-situ bioremediation of soils and ground water.

Acted as project manager for an Indiana Voluntary Remediation Program site on behalf of client. The scope included coordination of subcontractors and project personnel for excavation, removal, and disposal of approximately 50 55-gallon drums containing characteristic hazardous waste and impacted soil. Several drums of solvents containing toluene, xylenes, methyl ethyl ketone, methyl isobutyl ketone, PCE, trichloroethane, and other materials were buried on the 80-acre property. The site was associated with a former dry cleaning facility.

Acted as project manager for remediation activities at several active or closed solid waste disposal facilities across the state. Assisted with groundwater monitoring and reporting duties. Completed further site investigation work on these facilities.

Acted as project manager for several industrial cleaning and chemical lab pack sites. Chemical lab pack work included safely removing hazardous chemicals, such as picric acid, sulfuric acid, paints, and other various solvents for several educational facilities and industrial plants. Industrial cleaning work was completed at several factories or other commercial establishments across the state.

Acted as project manager for closure activities at two Voluntary Remediation Program facilities in central Indiana. Implemented insitu remediation techniques to obtain closure at one facility, and used ground water modeling to demonstrate natural attenuation of tetrachloroethene (PCE) as a feasible approach for achieving compliance with ground water standards at the other facility.

Completed many underground and aboveground storage tank (UST and AST) cleanings throughout the state of Indiana. Included entry, attendant, and supervisor roles for confined space entry. Operated earthmoving equipment for the demolition of several bulk terminal facilities.

Acted as a project manager for a major oil company client with over 165 petroleum impacted, marketing retail service stations (or former service stations) in Indiana. Developed state and client specific liability reduction strategies focusing on risk based site closures and remediation by natural attenuation, environmental restrictive covenants, and/or plume stability demonstrations as mechanisms for total program cost reduction.

## Chad Pitcher, CHMM

*Project Manager*

During the past four years, some of the specific project tasks Chad has completed for a major oil company include the following:

- Designed and managed several excavations that included soils contaminated with petroleum hydrocarbons. Several of these sites have achieved a no further action status.
- Designed and managed several sites to closure that were approved for monitored natural attenuation.
- Completed several Phase I Environmental Site Assessments or Historical Research Summary reports to respond to environmental comeback claims against the major oil company.
- Negotiated site closures with the Indiana Department of Environmental Management for the major oil company by using Mann-Kendall plume stability demonstrations, health risk assessments, and/or environmental restrictive covenants.
- Developed office standardizations in both field procedures and reporting responsibilities. Trained staff in computer aided drafting.
- Focuses on managing the remediation aspects of a project and tracking progress against financial and time schedule requirements. He has written external documentation and reports to meet company, client, and regulatory requirements.
- Responsible for management of subcontractors for site activities and health and safety compliance with major oil company safety protocols. Conducted field audits on both new and seasoned employees as well as subcontractors to ensure compliance with safety protocols.
- Developed safety packages designed to provide all necessary documents for completing safety checklists and forms prior to beginning field work that are scope specific.
- Communicated safety shared learnings to both staff and subcontractors. Assisted in the evaluation of Delta's office and companywide health and safety performance.

# Appendix B

# Hull’s Historical Incident Review

| Hull & Associates Historical Data<br><br>*YEAR* | AVERAGE NUMBER OF EMPLOYEES | NON-RECORDABLE INCIDENTS | RECORDABLE INCIDENTS | RECORDABLE INCIDENT OUTCOME # CASES | | | | DART (days away, restricted or transfered) | | HOURS WORKED | YTD TOTAL RECORDABLE CASE RATE | DART INCIDENCE RATE<br>Lost time Rate | DART SEVERITY RATE<br>Severity Rate | WORKERS COMPENSATION EXPERIENCE MODIFIER (EM) | WORKERS COMPENSATION COSTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Death | Lost Time incidents | Remained at work | | Away From Work (days) | On job transfer or restriction (days) | | | | | | |
| | | | | | | Job transfer or restriction | Other recordable cases | | | | | | | | |
| **1996** | - | 0 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | - | - | - | - | - | $2,504 |
| **1997** | - | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | - | - | - | - | - | $2,192 |
| **1998** | - | 0 | 2 | 0 | 1 | 0 | 1 | 10 | 0 | 149,504 | 2.68 | 1.34 | 13.38 | - | $289 |
| **1999** | - | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 160,954 | 1.24 | 0.00 | 0.00 | 0.48 | $416 |
| **2000** | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 249,522 | 0.00 | 0.00 | 0.00 | 0.59 | $60 |
| **2001** | 120 | 0 | 1 | 0 | 1 | 0 | 0 | 14 | 0 | 225,328 | 0.89 | 0.89 | 12.43 | 0.47 | $37,500 |
| **2002** | 130 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 243,000 | 1.65 | 0.00 | 0.00 | 0.94 | $792 |
| **2003** | 150 | 0 | 3 | 0 | 1 | 0 | 2 | 210 | 0 | 293,000 | 2.05 | 0.68 | 143.34 | 0.08 | $24,641 |
| **2004** | 162 | 2 | 2 | 0 | 1 | 1 | 0 | 1 | 3 | 347,513 | 1.15 | 1.15 | 2.30 | 0.28 | $275 |
| **2005** | 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 333,062 | 0.00 | 0.00 | 0.00 | 0.95 | $0 |
| **2006** | 160 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 324,378 | 0.62 | 0.00 | 0.00 | 1.25 | |

DART means days away from work, days of restricted duty or days when transfered to a different job  Non-Recordable Incidents includes incidents that are not recordable by OSHA definition

| 2006 YTD Data<br><br>*Month* | AVERAGE NUMBER OF EMPLOYEES | NON-RECORDABLE INCIDENTS | RECORDABLE INCIDENTS | RECORDABLE INCIDENT OUTCOME # CASES | | | | DART (days away, restricted or transfered) | | YTD HOURS WORKED-CUM-ULATIVE | YTD RECORDABLE CASE RATE | YTD DART INCIDENCE RATE<br>Lost time Rate | YTD DART SEVERITY RATE<br>Severity Rate |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Death | Lost Time incidents | Remained at work | | Away From Work (days) | On job transfer or restriction (days) | | | | |
| | | | | | | Job transfer or restriction | Other recordable cases | | | | | | |
| **JANUARY** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25,219 | 0.00 | 0.00 | 0.00 |
| **FEBRUARY** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 52,100 | 0.00 | 0.00 | 0.00 |
| **MARCH** | | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 84,524 | 0.00 | 0.00 | 0.00 |
| **APRIL** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 111,060 | 0.00 | 0.00 | 0.00 |
| **MAY** | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 137,123 | 1.46 | 1.46 | 0.00 |
| **JUNE** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170,770 | 0.00 | 0.00 | 0.00 |
| **JULY** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 196,962 | 0.00 | 0.00 | 0.00 |
| **AUGUST** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 222,652 | 0.00 | 0.00 | 0.00 |
| **SEPTEMBER** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 249,284 | 0.00 | 0.00 | 0.00 |
| **OCTOBER** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | #DIV/0! | #DIV/0! | #DIV/0! |
| **NOVEMBER** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | #DIV/0! | #DIV/0! | #DIV/0! |
| **DECEMBER** | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | #DIV/0! | #DIV/0! | #DIV/0! |
| **2006 YTD DATA** | #DIV/0! | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | #DIV/0! | #DIV/0! | #DIV/0! |

# Appendix C

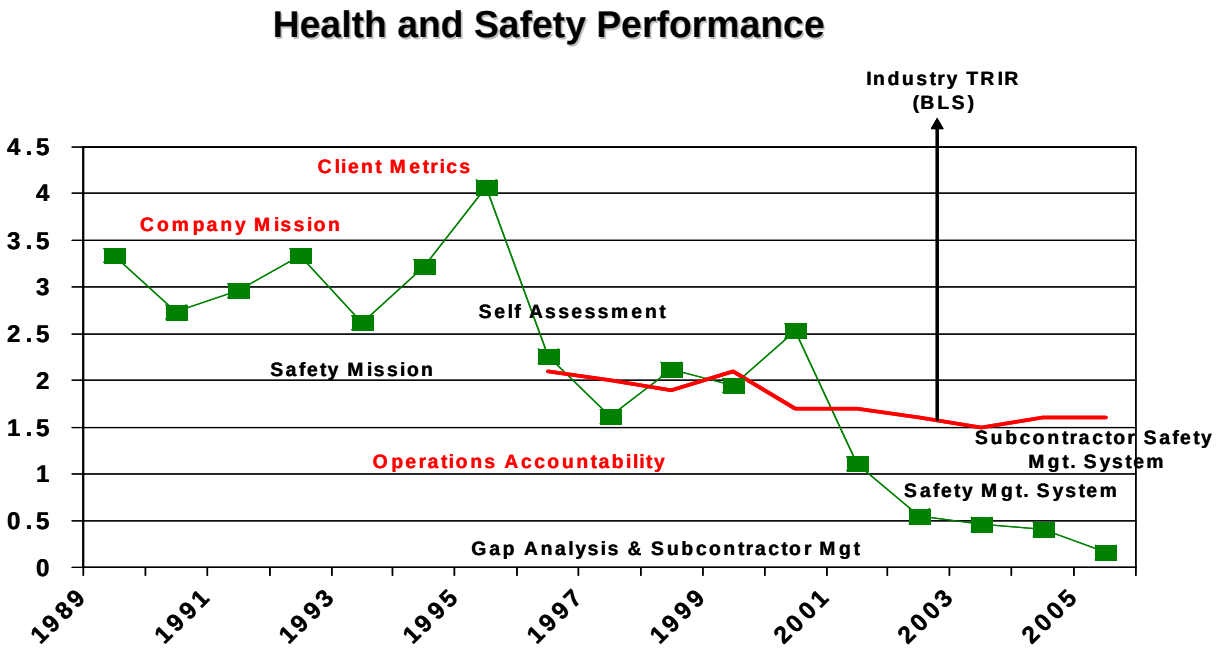
# Delta's Historical Incident Review and Other Information Regarding the Safety Management System

## Background

Delta's core business includes assessment and remediation services for the petroleum industry. Our petroleum industry clients include most of the major integrated oil companies, independent refiners and marketers and independent marketing companies. Delta is currently working on over 3,500 petroleum remediation sites, approximately 3,300 of which include retail, terminal and bulk plant facility-related sites. Over the past 5 years, we have lead design and installation of remediation systems on approximately 20 percent of these sites.

Delta is an international environmental engineering and consulting firm providing services to global customer organizations through our Inogen™ Global Alliance. Domestically, Delta directly provides services to our customers through our network of 42 offices, providing our customers the benefits of a national firm with local service delivery knowledge and expertise.

Delta has made tremendous progress in our overall health and safety performance over the past few years as indicated in the figure below. Our Total Recordable Incident Rate (TRIR) has developed substantially as a result of the program improvements we have made. A number of these improvements are noted in the graphic below.




Expanding upon an already comprehensive Health and Safety Program at Delta, we developed and launched a new comprehensive framework to help manage health and safety risks. This framework is called Delta's Safety Management System (SMS). The SMS is comprised of 10 essential elements, which are shown below and outlined in the following pages.

Delta's health and safety program and continuing initiatives are developed and molded with the input from all stakeholders: employees, subcontractors, clients, regulators and the general public. Delta's company operational structure is designed to be client-focused to ensure that Delta meets or exceed its client's requirements and expectations.

Delta staff employees, subcontractors and clients are regular participants in Delta health and safety meetings and are frequently asked to provide comments and feedback. Regulators and the public are included in any safety discussions that may impact them.

**Health and Safety Management System**

In 2005, Delta developed and launched a new comprehensive framework to help manage its Health & Safety risks. This framework is called Delta's Safety Management System (SMS). The SMS is comprised of 10 essential elements, which are shown below and outlined in the following pages. Delta's existing H&S programs, policies, procedures and being reviewed, modified and incorporated into the new framework.

## 10 Essential Elements of Delta's Safety Management System

# Safety Management System Guide

Delta's health and safety mission is to complete our work safely. Our goal of zero work-related injuries or illnesses requires a consistent company-wide culture. Meeting or exceeding our client targets calls for clearly established guidelines, tools and use expectations in our day-to-day work activities.

## Delta's Values

1. Conduct all our business ethically.
2. Conduct all our business safely.
3. Construct and maintain a sustainable business.

## Health and Safety Policy

Delta Environmental will proactively manage risk, provide a save and healthy work environment, achieve sustainable performance and earn the confidence and recognition of our clients and employees.

## Health & Safety Mission

Complete our work safely!

## Safety Goals

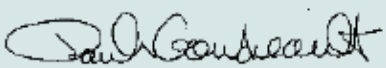
Zero work-related injuries or illnesses.
Meet or exceed client requirements.

*Complete our work safely . . .* At Delta, we believe that all work related injuries and occupational illnesses can be prevented and, therefore, that safety is a fundamental accountability of all managers and each employee. We also believe that safe work is part of how we solve our client's environment, health and safety-related business problems. Safety is a core value and is supported by a company-wide policy to proactively manage risk, provide a safe and healthy work environment, achieve sustainable performance and earn the confidence and recognition of our clients and employees. Everybody who works for Delta plays a vital role in helping to achieve our goal of zero work-related injuries/illnesses.

We have recently developed a comprehensive and structured framework to help manage our Health & Safety risks. We refer to this framework as our Safety Management System (SMS). Delta's SMS is comprised of 10 essential elements which are explained in greater detail in this document and on the Delta SMS website. On the website, move your mouse over any of the icons to see a description of the component and tools available and click on the icon to access a specific element.

As we work toward our goal of zero work-related injuries/illnesses, it is very important that we establish and maintain a consistent company-wide culture that will assist us in our efforts. Having one company-wide safety management system clearly outlines our expectations and provides the tools necessary to all managers and employees. We will achieve an injury free workplace!

Paul R. Goudreault
President and CEO



## 1. Roles and Accountabilities

Effective implementation of a safety management system requires active participation from all levels of management and all employees. This element of Delta's safety management system defines, documents and communicates how clearly defined health and safety accountabilities will be set, and how people will be held accountable - individually and collectively - for health and safety performance.

**Requirements:**

- Clearly defined health and safety accountabilities are established for each role within the firm.
- Health and safety accountabilities are documented.
- Effective two-way communication with regard to health and safety accountabilities will occur with all employees.
- Accountability measures for all employees are known, monitored, and feedback on performance is provided.
- Management will allocate appropriate financial, professional and organizational resources to effectively implement the safety management system.

The accountability element of Delta's SMS defines, documents, and communicates how health and safety accountabilities will be set, and how people will be held accountable - individually and collectively - for health and safety performance. This system requires active participation from all levels of management. Specifically, Delta strives to achieve that: (1) clearly defined health and safety accountabilities are established for each role within the firm, (2) health and safety accountabilities are documented, (3) effective two-way communication with regard to health and safety accountabilities will occur with all employees, (4) accountability measures for all employees are known, monitored, and feedback on performance is provided, and (5) management will allocate appropriate financial, professional and organizational resources.

The accountability for safety is embedded in the roles and assignments of each employee. Performing work safely is an integral part of how Delta solves its client's environment-related business problems. Because safety is recognized as being an operational accountability, the highest level accountability for managing a sustainable safety program rests with the Divisional Vice Presidents with Delta.

The following is an explanation of safety accountability and lines of authority.

- Delta's CEO is accountable for safety strategies to meet the objectives of the company.

- Division Vice Presidents are accountable for the implementation of Delta and client required safety programs throughout their division.

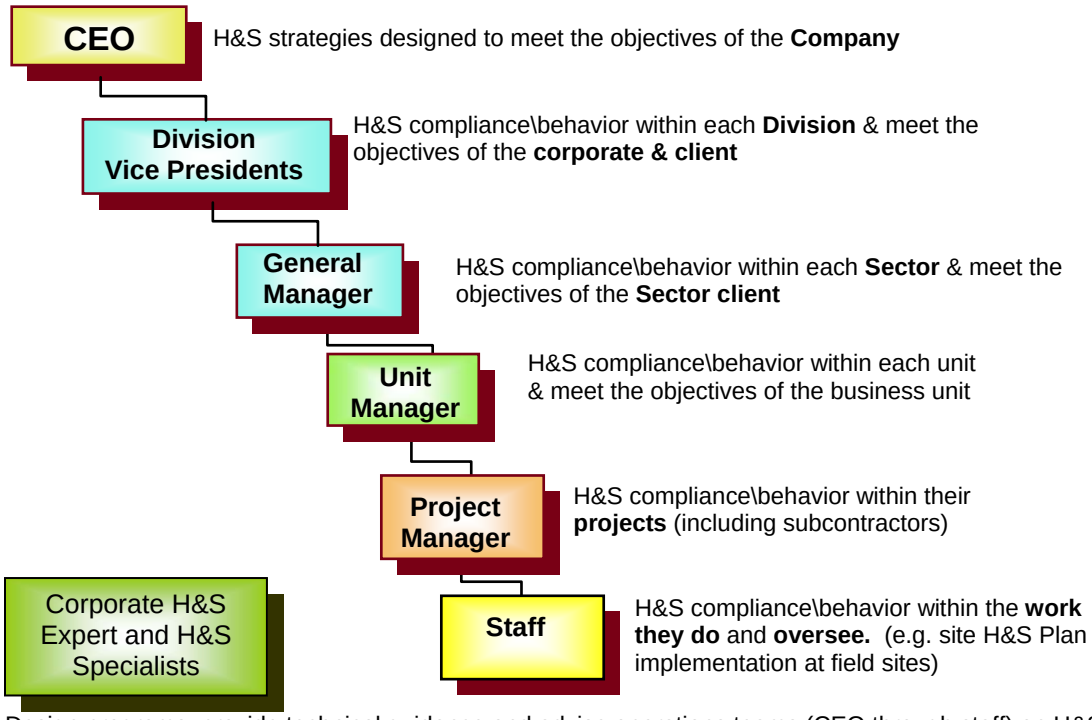
- The Corporate Health and Safety Expert is accountable for overall strategic direction of the health and safety program. The Health and Safety Expert has accountability for designing company-wide policies and procedures, coordinating the implementation of company-wide policies and procedures through the operational sectors, designing health and safety training modules, maintaining centralized medical exam and exposure monitoring files and reporting health and safety information.

- Division General Managers are accountable for the implementation of Delta and client required health and safety programs throughout their units or staff functions.

- Health & Safety Senior Specialists support General Managers and Unit Managers in evaluating the implementation of the safety processes throughout the Division. The key accountability of a Senior Specialist is to drive the continuous improvement of the Division's program.

- Unit Managers are accountable for the implementation of the health and safety program in their operating unit.
- Project Managers are accountable for managing project health and safety requirements and the safety of their staff.
- All employees are accountable for working in a safe manner.

**ACCOUNTABILITY THROUGH THE OPERATIONS CHAIN OF COMMAND**




Design programs, provide technical guidance and advise operations teams (CEO through staff) on H&S compliance.


Delta Field Sites

Delta performs a hazard assessment of each field site at the initiation of the project. Once the potential site hazards have been determined, the proper control measures to address the hazards are identified and outlined in a Site Health and Safety Plan (SHSP).

A SHSP is completed for all Delta projects involving exposure to chemical, physical or biological hazards. If necessary, exposure monitoring (noise, air contaminants, etc.) is performed on-site to assess and quantify site worker exposures. Any relevant exposure data is included in the SHSP, or is otherwise made available to site workers.

In addition to the hazards assessed and outlined in the SHSP, all employees and contractors are required to report all incidents and near misses to proactively assess site hazards. Injuries, accidents and other types of incidents are evaluated to determine the root cause and necessary corrective actions. All incidents (injuries through unsafe acts and conditions) are categorized and evaluated for trend analysis. Incident investigation results and incident trend analysis are used to identify risk areas and direct future company safety initiatives.

Contractors

Contractor risk is managed through Delta's Contractor Management Program. All contractors must have a signed, approved contract, proper insurance, and an acceptable safety program in place before they can work on Delta projects.


Delta's Health and Safety Manual (HSM) consists of 21 health and safety plans which outline the measures Delta will take to prevent injuries and illnesses in the workplace. The 21 plans are:

- Health and Safety Program Overview
- Hazard Communication Program
- Site Health and Safety Assessments and Plans
- Respiratory Protection Program
- Hearing Conservation Program
- Personal Protective Equipment
- Bloodborne Pathogen Exposure Control Program
- Medical Monitoring
- Recordkeeping
- Project Exposure Assessment and Audits
- Hazardous Material Transportation
- Safe Office Electrical Work Policy and Procedures
- Safe Electrical Work Policy and Procedures for Delta Project Work Energy
- Lockout/Tagout Program
- Confined Space Entry Program
- Office Ergonomics Program
- Incident/Injury/Investigation Reporting
- Training Program
- Shoring and Trenching/Specific Excavation Requirements Program
- Benzene Exposure Program
- Process Safety Management

Policy

- Drug and Alcohol.

Delta's SMS also allows for the development of new health and safety plans, and modification existing plans, to address Delta's ever-changing business risks.

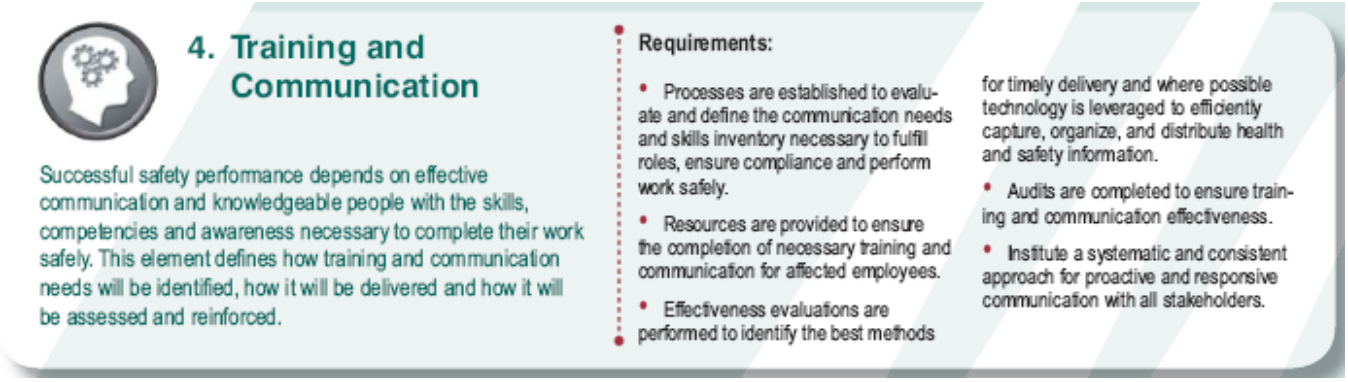
With specific regard to field projects, Delta's "Site Health and Safety Assessments and Plans" document, section 3 of the HSM, requires that project managers develop a Site-Specific Health and Safety Plan (SHSP) for each field project that they manage.

The SHSP is a field representation of Delta's company-wide health and safety program and is designed to: establish procedures to protect workers from potential hazards posed by the site, provide the measures to minimize the potential for accidents and injuries that may occur during daily activities, and help ensure that all safety aspects of site operations are thoroughly examined before work starts.

Fieldwork cannot begin on a Delta project until the SHSP is written, reviewed and approved. The contents of the SHSP are communicated to everyone who will work on the site. Each member of the project staff must review and sign the SHSP prior to the start of work. All subcontractors and visitors on a work site will read the SHSP, sign the designated forms, and comply with all safety procedures outlined in the plan. A signed copy of the plan is kept in the field for the duration of the project and returned to the project file upon completion of field activities. SHSPs are updated whenever new hazards and control practices are identified, new project team members are working on the project, or the scope-of-work changes.

Contractors review Delta's site health and safety plan (SHSP) and must sign the acknowledgement page. Prior to the start of field work, contractors are expected to provide safety information related to the tasks they perform on-site and to discuss these topics during on-site tailgate meetings. In some cases, contractor safety information is incorporated in Delta's SHSP to help eliminate any on-site safety plan redundancy. Delta reviews the key elements of the SHSP, and the project scope-of-work, during the daily on-site tailgate meeting.

For each day of a field project, work cannot start prior to the completion of a daily safety meeting and a site safety walk-through. The site safety walk through is performed to identify any additional hazards on-site. If other safety concerns are present on the site, they must be corrected before work can begin. In the event of identified hazard, Delta personnel are instructed to take necessary corrective action to abate the hazard, so long as it is within their training and skill level.



Training

Delta employees receive regular training (annual or biennial depending on the topic) on the safety topics appropriate for the work they perform, including any client-specific safety requirements. Employee training is completed either internally using Delta's safety training modules, or though third party safety training companies. Delta uses a training tracking database to verify employee compliance with Delta's training program. Delta field employees are audited in the field as a means of assessing their knowledge, skills and behaviors, and to assure compliance with our safety program. New employees go through orientation training and are required to be supervised for their first three days in the field.

Delta's "Training Program," Section 13 of Delta's HSM, outlines the training requirements for all Delta employees (office and field). Based on our experience the training needed to complete our field work includes, but is not limited to: HAZWOPER training, hazard communication, emergency action plans, PPE, respiratory protection, electrical safety awareness, hazard assessment, confined space awareness, excavation shoring and trenching awareness, benzene exposure, first aid/CPR/bloodborne pathogen, fire extinguisher, drug and alcohol, process safety management (refinery work), lockout/tagout (affected and authorized, as needed), and hazardous materials transportation (as needed).

All Delta employees working on client field sites are required to have up-to-date HAZWOPER training (40hr and 8hr refreshers), medical monitoring, first aid/CPR training, fire extinguisher training, defensive driver training, and other specialized training as needed (e.g. lockout/tagout, electrical safety, process safety management, hazardous materials transportation, etc.).

Contractor employees working on Delta sites must have training addressing the site hazards they are expected to encounter. Contractors performing work near or in impacted areas where exposures are possible must have up-to-date HAZWOPER/hazard communication training and medical monitoring. In addition, contractors are required to have safety training specific to the tasks they will perform (e.g. shoring and trenching, electrical safety, etc.).

Delta is working on the development a Delta-specific safety training program (current named Delta's "WorkVisa") for all contractor employees who will work on Delta sites. Contractors are required to complete the training and will be issued a completion card, which they will have to show before entering a Delta field site.

Communication

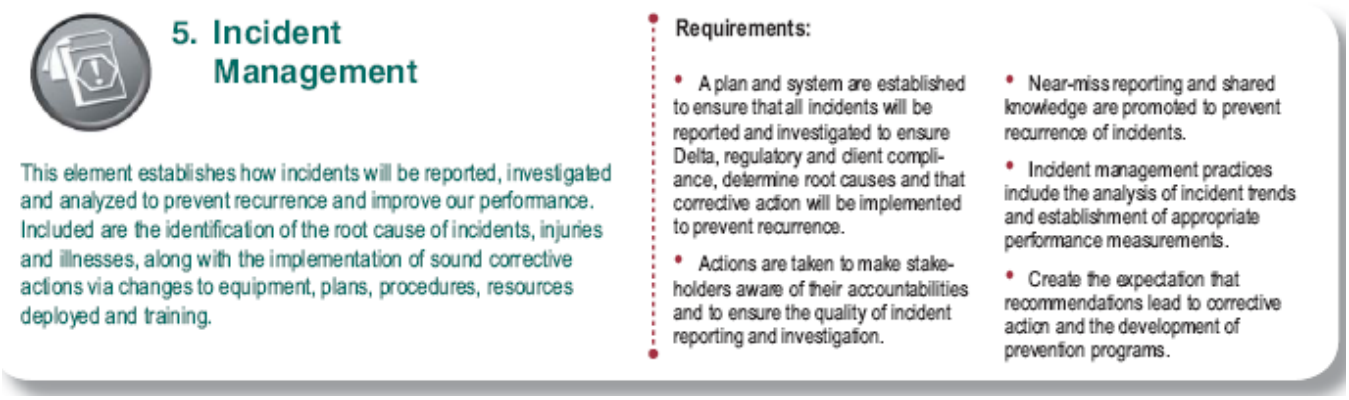
Delta strives to integrate safety into all business communications. Delta corporate and operations teams include safety topics during regular staff (monthly, quarterly, etc.), and Delta meetings open with a safety moment presented by a meeting member. Delta safety teams create and distribute company-wide and client-specific safety newsletters, shared learnings, and other safety training tools. Contractors are included in the distribution of such safety communications.

Delta's Contractor Management Program requires that contractors are assigned a Delta "sponsor" who acts as the main point of contact within Delta. The sponsor role creates a clear line of communication with contractors and helps ensure efficient and effective communication, and transfer of information.

With regard to project-specific safety meetings, all Delta field teams hold a daily tailgate meeting at the start of each work day. Other on-site safety meetings are held as necessary (e.g. afternoon tailgate, near miss discussion). All field people (Delta employees, contractors, clients,

etc.) are required to attend the on-site safety meetings. Topics of discussion in the daily tailgate include the day's scope of work and associated hazards, details from the site health and safety plan (e.g. emergency notification and evacuation plan, emergency contact information, etc), and any questions field staff may have.

Delta project managers hold office pre-work project safety meetings with contractors if the project scope-of-work requires it. Safety topics of discussion typically include: field work safety, on-site safety roles and responsibilities, JSA development, required safety equipment, etc.



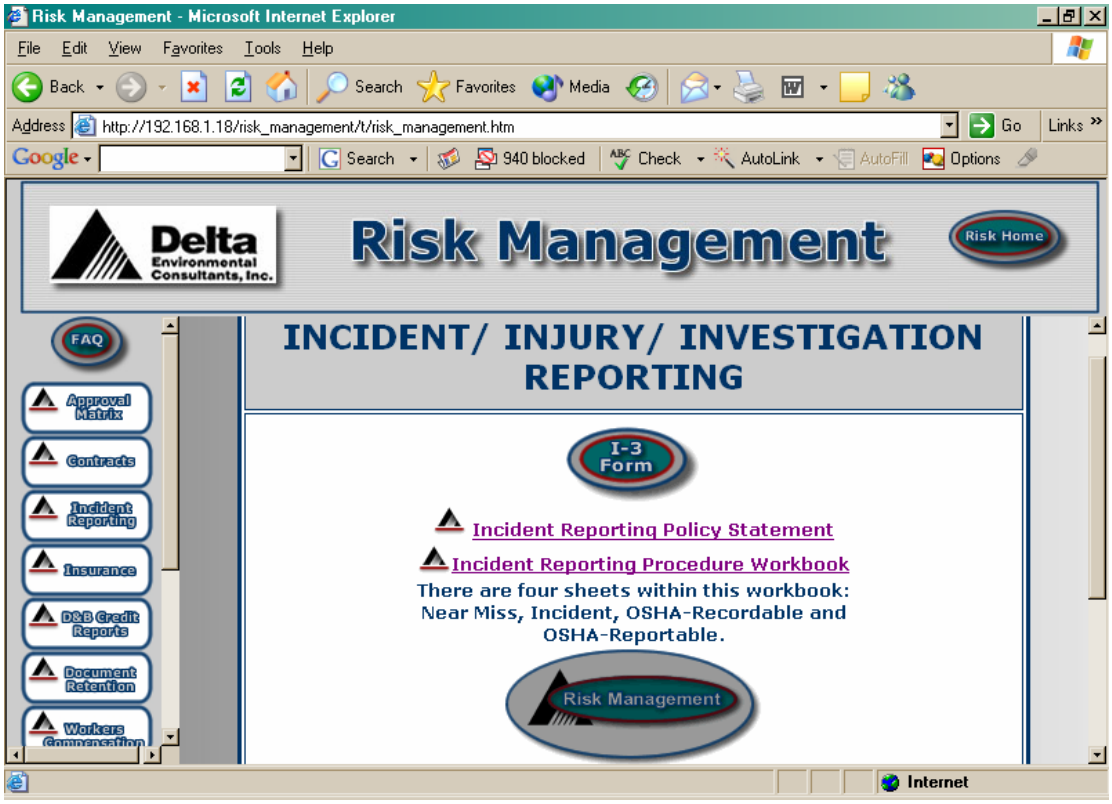

Delta reports all incidents, including near misses, unsafe acts and conditions, through its Incident, Injury, Investigation (I-3) program (Section 12 of Delta's HSM), and any client-specific reporting processes.

Each incident occurring on a Delta site, or to a Delta employee, is reported immediately to the employee's manager. The manager then notifies the appropriate parties depending on the severity of the incident- health and safety specialists, upper management, clients, etc.

An I-3 form is completed for all incidents, following the procedures outlined in Delta's HSM. A copy of the completed I-3 form is sent to Delta's corporate office within 24 hours. (A "First Report of Injury" is completed for all workers' compensation claims.) Worker's Compensation claims, if necessary, are filed through the designated unit staff. In addition, Delta follows all OSHA required incident reporting and recording requirements.

Delta's corporate and operations employees work together to investigate accidents, injuries and other incidents through the I-3 process. When appropriate, investigations include a root cause analysis of the event and the development of a corrective action plan to prevent future occurrences. All incidents are documented, categorized and evaluated for trend analysis. Incident investigation results and incident trend analysis are used to identify risk areas and direct future company safety initiatives.

The I3 page of Delta's Risk Management website guides employees through the process (see below).

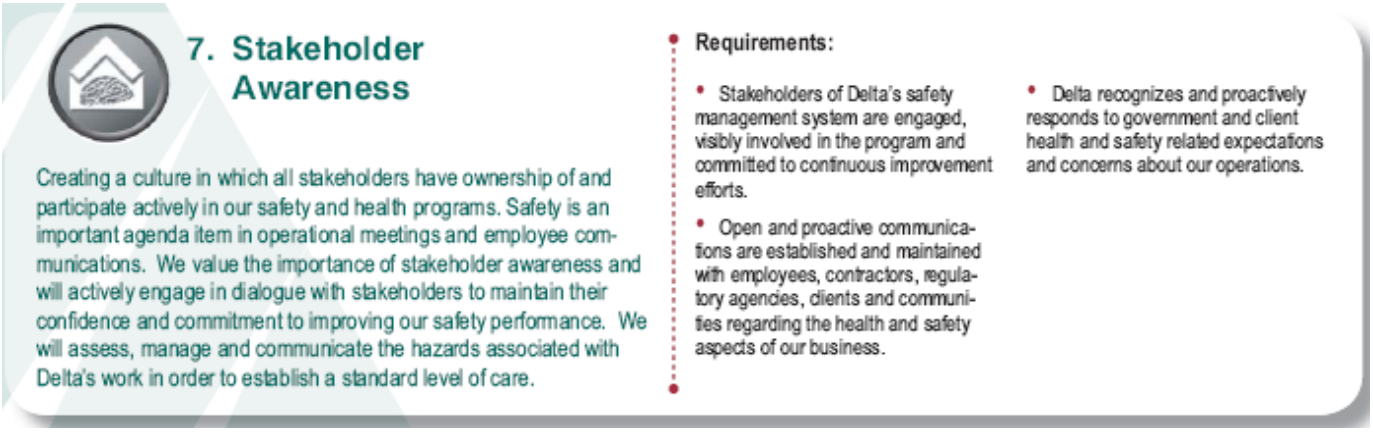




Delta's management is committed to a comprehensive contractor program that ensures a safe work environment, client satisfaction, the control of Delta's business risk, and is recognized as industry leading. The four key elements of Delta's Contractor Management Program (CMP) are: skills and competency, risk management, health and safety, and relationship management. All contractors go through a pre-qualification process which includes a review of historical safety performance, safety programs in place, drug and alcohol testing, and other safety-related parameters. Contractor information is tracked in Delta's CMP Database (accessible through Delta's CMP webpage, see below), so that operations personnel can easily review details about any contractor, including the contractor's approval status. Contractors are required to log onto the database (a.k.a. Contractor Network) and enter monthly reporting metrics, including, hours worked and incident/near miss reporting.

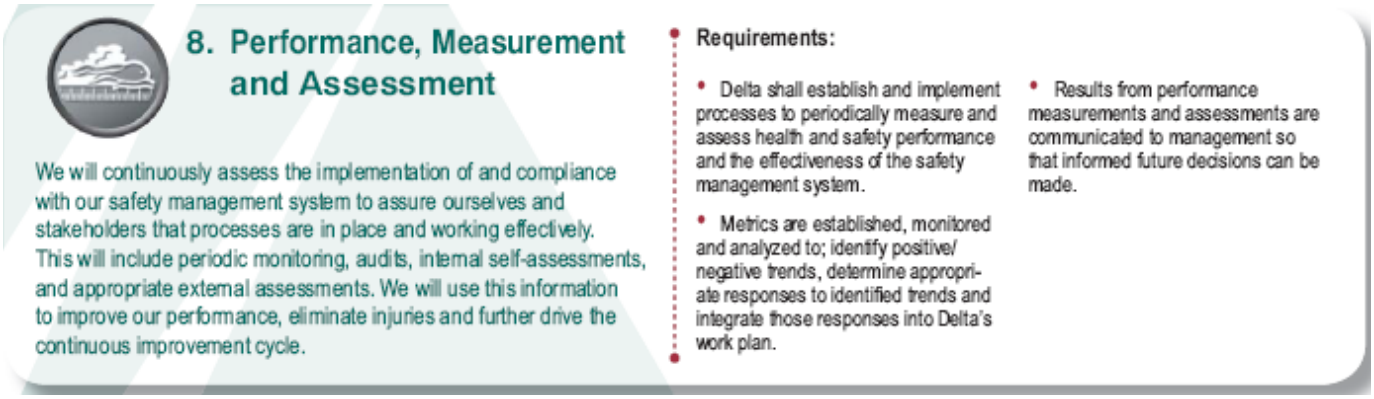

Delta coordinates on-site safety efforts with its contractors at the start of each project to ensure clear communication throughout the scope-of-work. Contractors are informed of all Delta and client safety requirements and are required to follow them while performing work.

Additional information about the elements of Delta's CMP, and how contractors are included in Delta's safety program can be found throughout this document.




Delta's health and safety program and continuing initiatives are developed and molded with the input from all stakeholders: employees, contractors, clients, regulators, and the general public. Delta's company operational structure is designed to be client-focused to ensure that Delta meets or exceed its client's requirements and expectations.

Delta staff employees, contractors and clients are regular participants in Delta health and safety meetings and are frequently asked to provide comments and feedback. Regulators and the public are included in any safety discussions that may impact them.




Delta's Health and Safety, Risk Management, and Contractor Management groups work collaboratively to measure, assess, and improve Delta's performance.

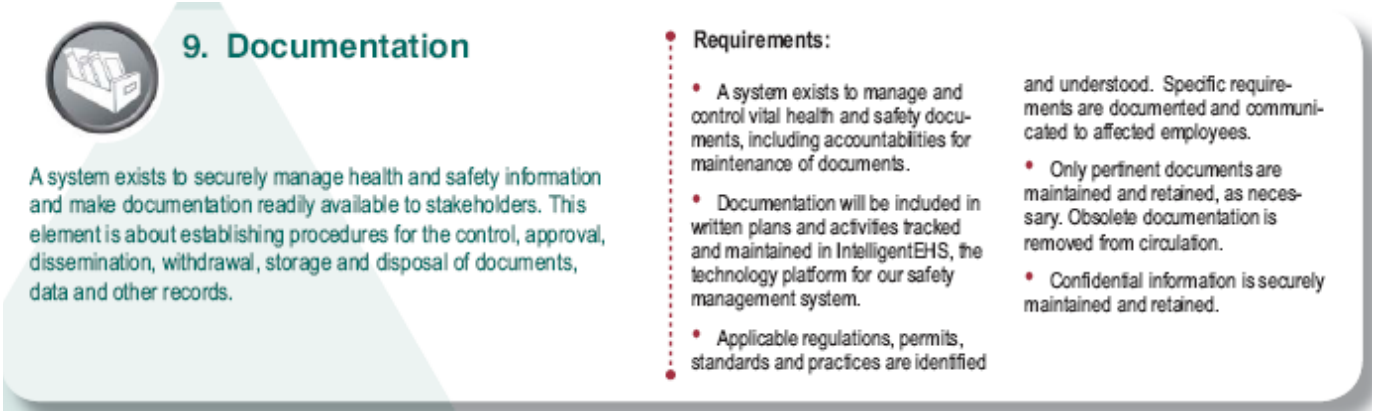
In addition to the measurement and assessment of the company SMS and company safety plans, Delta operations groups regularly measure and assess health and safety performance on all levels- from divisional program implementation to individual worker performance.

Company-wide, Delta tracks several safety metrics including: hours worked, contractor hours worked, and incident, near miss, unsafe act or condition reporting (Delta and contractors).

Delta divisions, or client groups, track additional client-required monthly metrics such as safety meetings held, regulatory notices of violation reported, etc.

All metrics are reviewed and analyzed regularly to determine trends (positive or negative) and help guide future safety initiatives and efforts.

In addition to metrics assessment tools, operations teams regularly perform health and safety audits, whether in the field or office. Field audits can include anything for worker observation to infrastructure evaluation. Safety auditors may evaluate team or individual performance depending on the situation. Site worker field audits include all workers on site-- Delta employees, contractors, subcontractors, etc. Field audits of site workers are used not only as means of assessing their knowledge, skills and behaviors, and to assure compliance with our safety program, but are also to evaluate the effectiveness of Delta's safety programs themselves.

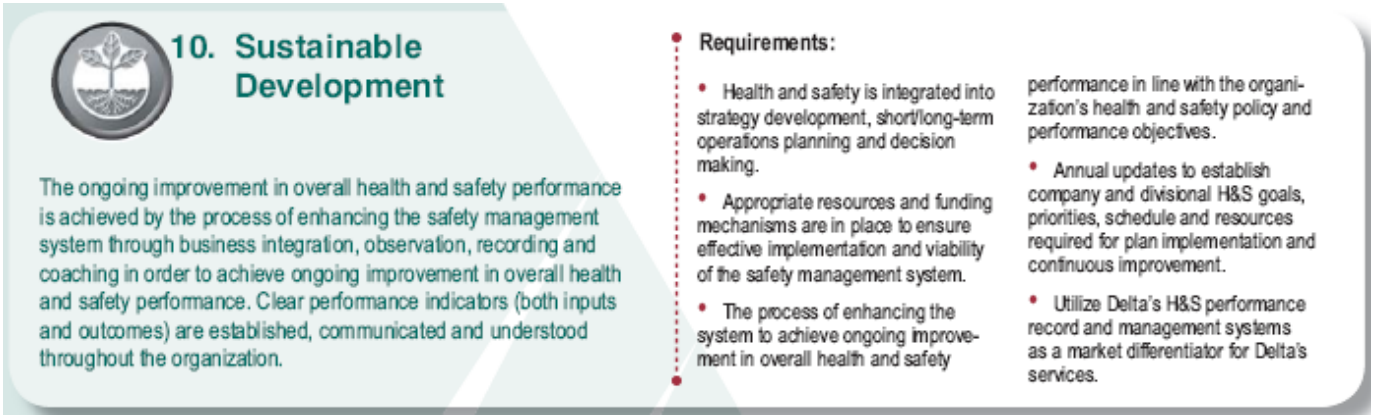



Within the IntellegentEHS technology platform, there are several tools to maintain and track health and safety records. One tool, Delta's Training Tracking Database, is used to record, track and update all employee health and safety training and medical monitoring. Managers and employees are automatically notified by the system when training expiration dates approach to ensure employee training is kept up-to-date. Employee training certificates are scanned and uploaded directly into the database so that certificate copies are readily available for internal and client auditing.

Also within IntellegentEHS, is Delta's Contractor Management Program Database, which is used to track contractor safety training and to monitor contractor compliance with Delta's safety requirements. Contractors are mark as "green light" (approved to use), "yellow light" (require additional information to be approved), or "red light" (not approved to use), so that operations employees can quickly see a contractor's status. The database also allows operations employees to query approved contractors by name, expertise or location.

Depending on client requirements, Delta divisions or client groups may develop client-specific safety management tools within the IntellegentEHS platform.

Project specific safety documentation such as SHSPs, site audits, and exposure monitoring data are maintained within the project's operational files.




Performing its work safety is a key part of how Delta solves it clients' environment, health and safety related business problems. As such, health and safety is integrated into Delta's operations.

# Appendix D

# Hull's "Z" Score and Bank Letter

**Z Score Calculation:**

Confidential
Hull Associates, Inc.
Financial Ratios

| | | 12/01 | 12/02 | 12/03 | 12/04 | 12/05 |
|---|---|---|---|---|---|---|
| Working Capital / Total Assets | | 0.50 | 0.30 | 0.24 | 0.19 | 0.18 |
| Retained Earnings / Total Assets | | 0.40 | 0.41 | 0.40 | 0.38 | 0.33 |
| Earnings Before Interest / Total Assets | | 0.10 | 0.14 | 0.09 | 0.14 | 0.11 |
| Value of Equity / Book Value of Debt | | 0.71 | 0.76 | 0.68 | 0.63 | 0.48 |
| Sales / Total Assets | | 2.27 | 2.36 | 2.38 | 2.21 | 2.00 |
| | | 3.98 | 3.97 | 3.79 | 3.55 | 3.10 |
| Weight: | | | | | | |
| | 1.2 | 0.6 | 0.4 | 0.3 | 0.2 | 0.2 |
| | 1.4 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 |
| | 3.3 | 0.3 | 0.4 | 0.3 | 0.5 | 0.4 |
| | 0.6 | 0.4 | 0.5 | 0.4 | 0.4 | 0.3 |
| | 1.0 | 2.3 | 2.4 | 2.4 | 2.2 | 2.0 |
| **Z Score** | | **4.2** | **4.2** | **3.9** | **3.8** | **3.3** |

| 2004 Financial Summary Data | | |
|---|---|---|
| Annual Gross Revenue | $ 20,283,338 | $ 25,788,370 |
| Total Assets | $ 9,184,654 | $ 12,879,063 |

Fifth Third Bank

*David W. McGranahan*
*Vice President*

July 15, 2005

To Whom It May Concern:

Re: Hull & Associates, Inc.

Please be advised that Hull & Associates, Inc. has been a client of Fifth Third Bank since 1994. The company maintains an open revolving line of credit in the moderate seven figure range. Hull & Associates, Inc. also maintains a depository relationship with this Bank. Both the lending arrangements and depository relationship are handled as agreed.

We consider Hull & Associates, Inc. a highly valued, credit worthy commercial client of our Bank. I would be happy to answer any questions, or if you need additional information, please feel free to contact me directly at (419) 259-7666.

Very truly yours,

David W. McGranahan
Vice President

DM/kll

Fifth Third Bank

David McGranahan, CPA
Vice President

606 Madison Avenue • MD 292941 • Toledo, OH 43604
Tel 419-259-7666 • Fax 419-259-6970 • Cell 419-350-4850
david.mcgranahan@53.com • www.53.com

# Appendix E

# Delta’s Audited Financial Statement

**DELTA ENVIRONMENTAL CONSULTANTS, INC.**
**AND SUBSIDIARIES**
**CONSOLIDATED BALANCE SHEETS**
**AS OF DECEMBER 30, 2005 AND DECEMBER 31, 2004**

Strictly Confidential

| ASSETS | 2005 | 2004 |
|---|---|---|
| CURRENT ASSETS | 40,814,383 | 32,476,362 |
| PROPERTY, PLANT & EQUIPMENT (NET) | 3,083,633 | 3,690,202 |
| OTHER ASSETS | 23,580,340 | 7,565,358 |
| TOTAL ASSETS | 67,478,356 | 43,731,922 |

| LIABILITIES AND STOCKHOLDERS' EQUITY | | |
|---|---|---|
| CURRENT LIABILITIES | 33,899,512 | 25,209,699 |
| LONG-TERM LIABILITIES | 17,440,243 | 2,615,862 |
| TOTAL LIABILITIES | 51,339,755 | 27,825,561 |
| STOCKHOLDERS' EQUITY | 16,138,601 | 15,906,361 |
| TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY | 67,478,356 | 43,731,922 |

Audited By: WIPFLI LLP
7601 France Avenue South
Minneapolis MN 55435

**DELTA ENVIRONMENTAL CONSULTANTS, INC.**
**AND SUBSIDIARIES**
**CONSOLIDATED STATEMENT OF OPERATIONS**
**FOR PERIODS ENDED DECEMBER 30, 2005 AND DECEMBER 31, 2004**

Strictly Confidential

| | 2005 | | 2004 | |
|---|---|---|---|---|
| REVENUE | | 117,617,486 | | 107,437,344 |
| COST OF REVENUES | | 78,147,476 | | 67,142,996 |
| GROSS PROFIT | | 39,470,010 | | 40,294,348 |
| GENERAL OPERATING EXPENSES | | | | |
| Division General and Administrative Expenses | 29,038,750 | | 27,220,896 | |
| Corporate General and Administrative Expenses | 10,038,580 | | 8,627,959 | |
| Total General Operating Expenses | | 39,077,330 | | 35,848,855 |
| INCOME FROM OPERATIONS | | 392,680 | | 4,445,493 |
| INTEREST/OTHER INCOME (EXPENSE) | | (722,941) | | (427,807) |
| INCOME BEFORE INCOME TAXES | | (330,261) | | 4,017,686 |
| INCOME TAXES | | 64,080 | | 98,000 |
| NET INCOME (LOSS) | | (394,341) | | 3,919,686 |

Audited By: WIPFLI LLP
7601 France Avenue South
Minneapolis MN 55435

# Appendix F

# Cost Estimate

| HULL'S FEE SCHEDULE | | | |
|---|---|---|---|
| **ROLE** | **HOURLY RATE RANGE** | **ROLE** | **HOURLY RATE RANGE** |
| Hydrogeologist - Senior | $90 - $140 | Engineer - Staff | $60 - $80 |
| Engineer - Senior | $95 - $140 | Scientist - Staff | $50 - $70 |
| Scientist - Senior | $90 - $140 | Technician - Senior | $60 - $75 |
| Project Manager | $85 - $120 | Technician - Staff | $45 - $60 |
| Hydrogeologist - Project | $75 - $90 | Paraprofessional | $40 - $60 |
| Engineer - Project | $80 - $95 | Draftsperson | $45 |
| Scientist - Project | $70 - $90 | Clerical | $25 – $40 |
| Hydrogeologist - Staff | $55 - $75 | | |

| DELTA'S FEE SCHEDULE | | | |
|---|---|---|---|
| **ROLE** | **HOURLY RATE RANGE** | **ROLE** | **HOURLY RATE RANGE** |
| Hydrogeologist - Senior | $90 - $140 | Engineer - Staff | $60 - $80 |
| Engineer - Senior | $95 - $140 | Scientist - Staff | $50 - $70 |
| Scientist - Senior | $90 - $140 | Technician - Senior | $60 - $75 |
| Project Manager | $85 - $120 | Technician - Staff | $45 - $60 |
| Hydrogeologist - Project | $75 - $90 | Paraprofessional | $40 - $60 |
| Engineer - Project | $80 - $95 | Draftsperson | $45 |
| Scientist - Project | $70 - $90 | Clerical | $25 – $40 |
| Hydrogeologist - Staff | $55 - $75 | | |

- Legal testimony charged at one and a half times the listed rate
- Employee reimbursable expenses charged at cost + 15%
- Delta processed subcontractor invoices charged at cost + 15%

# HOOSIER EQUIPMENT SERVICE, INC.

*Distinctly Superior Environmental Construction Service Since 1978*

October 31, 2006

Re: Proposal for IFA Brownfield Remediation
Project Location – Statewide
Proposal No. 06306

Hoosier Equipment Service, Inc. would like to thank you for the opportunity to team with your firm in pursuit of the IFA regional brownfield contract(s). We have itemized our proposal to follow the format provided in the RFQ distributed by IFA. In instances where we feel more information is warranted, I have added additional items below the requested information.

**Overview:** Hoosier Equipment Service, Inc is one of the premier environmental construction companies in the Midwest. We provide our clients, environmental consultants, private and public entities and municipalities, with the piece of mind that our field employees are hazmat trained, confined space entry trained, annually medically monitored per local, state and federal regulations and have five employees certified by the Indiana State Fire Marshall for the removal of underground storage tanks. In addition to 28 years in business, the majority of our field employees possess over 10 years of experience with our firm. Having performed our services for various, Fortune 100 companies, Hoosier Equipment Service, Inc holds (in addition to our General Liability policy) an Excess Liability/ "Umbrella" policy in the amount of $5 million. We also carry a $2 million occurrence, $2 million aggregate Pollution policy. We look forward to the opportunity to work with you and your firm in the near future.

**Region 1**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate**, trucking and landfill) - **$44.35 per ton**
d) Petroleum impacted tank contents per gallon (labor and trucking)
   1. **$.68 per gallon**
   2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
   1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton **$10.95** per ton.
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 2**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate,** trucking and landfill) - **$34.85** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
   1. **$.68 per gallon**
   2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
   1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton **$7.25 per ton**
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 3**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate**, trucking and landfill) - **$34.85** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
    1. **$.68 per gallon**
    2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
    1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton **$7.25 per ton**
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 4**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate,** trucking and landfill) - **$34.85** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
    1. **$.68 per gallon**
    2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
    1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton - **$7.25 per ton**
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 5**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate**, trucking and landfill) - **$34.85** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
    1. **$.68 per gallon**
    2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
    1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton - **$7.25 per ton**
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 6**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate**, trucking and landfill) - **$46.60** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
    1. **$.68 per gallon**
    2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
    1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton **$11.50** per ton
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

**Region 7**

a) Removal of tanks, piping, dispensers < 5,000 gallons (assumed empty) – **$2,250.00**
b) Removal of tanks, piping, dispensers > 5,000 gallons (assumed empty) – **$4,100.00**
c) Petroleum Impacted soil disposal (**excavate,** trucking and landfill) - **$39.75** per ton
d) Petroleum impacted tank contents per gallon (labor and trucking)
    1. **$.68 per gallon**
    2. **$285.00 per drum**
e) Solid waste disposal per ton (concrete, asphalt, general refuse) –
    1. **$12.00 per ton if asphalt or concrete**
k) Backfill and trucking per ton **$8.60** per ton
l) Labor cost per hour - **$50.00 per laborer hour**

(Note: General impacted soil removal pricing based upon 400 tons of impacted material and a 1 hour turn time to the landfill. Backfill pricing based on general fill available within ½ hour turn.)

** All pricing is subject to reasonable fuel adjustments for the duration of contract.

Please feel free to contact us regarding any questions or requests for additional information. We look forward to speaking with you regarding the results of the subject RFQ. Thank you for your consideration of Hoosier Equipment Service as part of your team.

Kind Regards,

Heidi Farmer
hfarmer@hoosierequipment.com

# Typical Rates for Drilling and Monitoring Well Installation Services

| Item of Work | Units | Lump Sum (USD) |
|---|---|---|
| | | |
| **DRILLING** | | |
| **Soil Boring With Sampling (Hollow Stem Auger)** | | |
| Mobilization/Demobilization Charge (Per location) Radius 1-100 Miles | $/Loc. | $ 315.00 |
| Mobilization/Demobilization Charge (Per location) Radius 100 - 200 Miles | $/Loc. | $ 420.00 |
| Mobilization/Demobilization Charge (Per location) Radius > 200 Miles | $/Loc. | $ 525.00 |
| Drilling Soil Boring 0 - 30 ft (per foot) | $/Ft | $ 10.50 |
| Drilling Soil Boring >30 ft (per foot) | $/Ft | $ 12.60 |
| Sample Collection (per sample) | $/Sample | $ 13.65 |
| Saw-cutting Through concrete, asphalt etc. | $/Boring | $ 52.50 |
| Grouting of soil borings ( Per ft) | $/Ft | $ 6.56 |
| Restoration of boring corehole or sawcut (Per Boring) | $/Boring | $ 21.00 |
| | | |
| **Hydraulic Probe Sampling** | | |
| Mobilization/Demobilization Charge (Per location) Radius 1-100 Miles | $/Loc. | $ 183.75 |
| Mobilization/Demobilization Charge (Per location) Radius 100 - 200 Miles | $/Loc. | $ 341.25 |
| Mobilization/Demobilization Charge (Per location) Radius > 200 Miles | $/Loc. | $ 525.00 |
| Probe with Operator (Per Day) | $/Event | $ 945.00 |
| Probe with Operator (Per 1/2 Day) | $/Event | $ 525.00 |
| Sample Collection - Soil (Hydraulic Probe) | $/Sample | $ 4.99 |
| Well Materials 1" X 5' 0.010 SCH 40 PVC Screen | $/Section | $ 14.33 |
| Well Materials 1" X 5' SCH 40 PVC Riser | $/Section | $ 9.45 |
| Sample Collection Water (1- | $/Sample | $ 21.00 |

| | | | |
|---|---|---|---|
| Inch Temporary Wells) | | | |
| | | | |
| **Monitor Well Installation (Hollow Stem):** | | | |
| 4" Well Screen (Per ft) | $/Ft | $ | 44.10 |
| 2" Well Screen(Per ft) | $/Ft | $ | 27.30 |
| 4" Well Riser (Per ft) | $/Ft | $ | 44.10 |
| 2" Well Riser (Per ft) | $/Ft | $ | 27.30 |
| Flush Mount Construction & 2' X 2' concrete pad (Per Well) | $/Well | $ | 126.00 |
| Remove & Re-Install Flush Mount Well Vault Construction | $/Well | $ | 168.00 |
| | | | |
| **Well Development** | | | |
| 4" Well <30ft (Per Well) | $/Well | $ | 52.50 |
| 2" Well <30ft (Per Well) | $/Well | $ | 36.75 |
| 4" Well >30ft (Per Well) | $/Well | $ | 68.25 |
| 2" Well >30ft (Per Well) | $/Well | $ | 52.50 |
| | | | |
| **Well Abandonment** | | | |
| Mobilization/Demobilization Charge (Per location) Radius 1-100 Miles | $/Loc. | $ | 315.00 |
| Mobilization/Demobilization Charge (Per location) Radius 100 - 200 Miles | $/Loc. | $ | 420.00 |
| Mobilization/Demobilization Charge (Per location) Radius > 200 Miles | $/Loc. | $ | 525.00 |
| Well Abandonment via over-drilling (per foot) | $/Ft | $ | 15.75 |
| Well abandonment via pressure grouting ( per foot) | $/Ft | $ | 5.25 |
| Replace surface completion with Asphalt or concrete | $/Well | $ | 78.75 |
| | | | |
| **Borehole Clearance** | | | |
| Airknife (half day) | $/Event | $ | 682.50 |
| Airknife (full day) | $/Event | $ | 1,286.25 |

# Standard Equipment Rental Rates for Typical UST Assessment, Removal, and Remediation Projects

| FIELD EQUIPMENT | RATE | | TOTAL |
|---|---|---|---|
| | daily | weekly | |
| **AIR MONITORING EQUIPMENT** | | | |
| Gas Detector (Gastech GT 201 3-Way) | $55.00 | $95.00 | |
| Oxygen Meter (CGI MX-251) | $55.00 | $95.00 | |
| Photoionization Detector (HNU 10.2 eV) | $90.00 | $240.00 | |
| Photoionization Detector (OVM 580 B 10.6 eV) | $90.00 | $240.00 | |
| **WATER MONITORING EQUIPMENT** | | | |
| Dissolved Oxygen Meter (YSI - 25 ft.) | $35.00 | $75.00 | |
| Dissolved Oxygen Meter (YSI - 50 ft.) | $35.00 | $75.00 | |
| Interface Probe (ORS) | $60.00 | $125.00 | |
| Interface Probe (Solinst - Model 121) | $60.00 | $125.00 | |
| Interface Probe (Solinst - Model 122) | $60.00 | $125.00 | |
| pH, temp, conductivity meter (Oakton) | $40.00 | $90.00 | |
| pH, temp., conductivity Meter (Hydac) | $40.00 | $90.00 | |
| pH, temp., conductivity Meter (Orion 1230) | $40.00 | $90.00 | |
| Water Level Meter (Solinst - 100 ft.) | $30.00 | $60.00 | |
| Water Level Meter (Solinst - 100 ft.) | $30.00 | $60.00 | |
| Well Wizard flow-through cell (low flow) | $100.00 | $300.00 | |
| Recording Stream depth gauge (0 - 11.5') | $0.00 | $75.00 | |
| Recording Stream depth gauge (0 - 34.6') | $0.00 | $75.00 | |
| Recording Rain gauge | $0.00 | $75.00 | |
| Stream Flow Velocity meter | $35.00 | $100.00 | |
| **GROUNDWATER PUMPS** | | | |
| Monitoring Well Pump (Dual Whaler 2") | $30.00 | $90.00 | |
| Monitoring Well Pump (Whaler 2") | $15.00 | $45.00 | |
| Submersible Pump (Grundfos 2") | $125.00 | $245.00 | |
| Trash Pump | $25.00 | $75.00 | |
| **ASBESTOS SAMPLING** | | | |
| Bulk Sampler | $5.00 | $15.00 | |
| **SOIL SAMPLING AND TESTING** | | | |
| AMS Soft Sediment Sampler | $50.00 | $150.00 | |
| AMS Soil Auger | $10.00 | $30.00 | |
| AMS Soil Probe | $10.00 | $30.00 | |
| AMS Soil/Sludge Sampler | $10.00 | $30.00 | |
| KVA Auger System | $100.00 | $300.00 | |
| Tensiometer (destructive testing) | NA | $100.00 | |
| Test Pad Tubes | $40.00 | $120.00 | |
| **SURVEYING EQUIPMENT** | | | |

| | | | |
|---|---|---|---|
| Level, Rod, and Tripod | $15.00 | $45.00 | |
| Magnetic Locator (TW-6 Cable Locater) | $35.00 | $75.00 | |
| Temperature Probe (Atkins Model 14235) | $30.00 | $90.00 | |
| Ultrasonic Thickness Gauge Gridmike | $50.00 | $150.00 | |
| Utility Locator (Schondstadt GA-52) | $12.00 | $36.00 | |
| **MISCELLANEOUS FIELD EQUIPMENT** | | | |
| Air Compressor (Craftsman 3 hp, 20 gal.) | $15.00 | $45.00 | |
| Generator (Honda) | $45.00 | $140.00 | |
| SVE unit (5 hp blower) | $175.00 | $500.00 | |
| Trailer | $15.00 | $45.00 | |
| VE Magnehelic gauges (set) | $10.00 | $30.00 | |
| Vehicle | $20.00 | $60.00 | |
| **EQUIPMENT ITEMS NOT LISTED** | | | |
| GeoXT (GPS system) | $80.00 | $350.00 | |

# Lab Costs #1

Quotation

| | | | |
|---|---|---|---|
| Quote ID: | Hull PRGI 10-31-06-KLB | Project ID: | PRGI Quote |
| Client: | Doug Stuart | Report To: | Project Managers |
| | Hull and Associates | | |
| | 6330 E. 75th Street | Start Date: | "2007 |
| | Indianapolis, IN 46250 | | |
| | | TAT: | 10 Business Days |
| Phone: | 317-558-0558 | | |
| Fax: | 317-558-0560 | Report Level: | DQO Level II |

| Parameter | Method | Matrix | Unit Price | Level IV Data Package Unit Price |
|---|---|---|---|---|
| TPH GRO | 8015/5035 | Soil/Groundwater | $ 35.00 | $ 40.25 |
| TPH ERO | 8015/5035 | Soil/Groundwater | $ 40.00 | $ 46.00 |
| BTEX/MTBE | 8021 | Soil/Groundwater | $ 35.00 | $ 40.25 |
| cPAHs (included Naphthalene) | 8270 SIM | Soil/Groundwater | $ 85.00 | $ 97.75 |
| UST Metals (total and Dissolved) | 6000/7000 Series | Soil/Groundwater | $ 60.00 | $ 69.00 |
| PCBs | 8082 | Soil/Groundwater | $ 65.00 | $ 74.75 |
| VOCs | 8260/5035 | Soil/Groundwater | $ 85.00 | $ 97.75 |
| Flash Point | 9095 | Soil | $ 15.00 | $ 17.25 |
| TCLP Lead | 1311/6010 | Soil | $ 55.00 | $ 63.25 |
| TCLP Benzene | 1311/8260 | Soil | $ 120.00 | $ 138.00 |
| Paint Filter | 9095 | Soil | $ 15.00 | $ 17.25 |
| Percent Moisture | ASTM | Soil | $ 5.00 | $ 5.75 |
| Terracore Kit | 5035 | | $ 12.00 | $ 12.00 |

Pace Analytical Services, Inc. standard payment terms are due upon receipt of invoice.

Special Instructions:
Metals list includes Barium, Cadmium, Chromium (total), Lead, Mercury, Nickel and Zinc. The client will be charged $25.00 to have their samples filtered in the laboratory instead of the field for the dissolved metals analysis. Terracore kits/analysis will be provided upon request from client.

**Laboratory**
Pace Analytical Services, Inc.
7726 Moller Rd.
Indianapolis, IN 46268
Phone: 317-875-5894
Fax 317-872-6189

| | |
|---|---|
| Prepared By: | Kristen Boyce |
| Title: | Account Executive |
| Extension: | 317-502-9594 |

# Lab Costs #2

Belmont Labs
*25 Holiday Drive*
*Englewood, Ohio 45322-2706*

TEL: *(937) 832-8242*
FAX: *(937) 832-2868*

02-Nov-06

## QUOTATION for ANALYTICAL SERVICES

Company: Hull & Associates, Inc.
Contact: Doug Stuart
Address: 6330 E. 75th Street
Suite 176
Indianapolis, IN 46250
Phone: (317) 558-0558 Fax: (317) 558-0553

Submitted By:
Holly Green

Quote ID: K 7576
Project: IFA RFQ
TAT: 10 working days
QC Level: LEVEL II

Expires: 31-Dec-07

| TEST ID | Matrix | Test Name | Test | Remarks | # Samp | Unit Price | Test Total |
|---|---|---|---|---|---|---|---|
| SUPPLIES | | Sampling Supplies | | | 1 | $18.50 | $18.50 |
| PMOIST | Soil | Percent Moisture | D2216 | | 1 | $5.00 | $5.00 |
| RCRA METAL | Soil | 8 RCRA Metals, Soil 6000/7000 Series | NA | | 1 | $65.00 | $65.00 |
| RCRA METAL | Aqueous | 8 RCRA Metals, Water 6000/7000 Seri | NA | | 1 | $65.00 | $65.00 |
| CPAH_IDEM_ | Soil | Carcinogenic PAH List, Soil Comm/Ind | NA | | 1 | $75.00 | $75.00 |
| CPAH_IDEM_ | Soil | Carcinogenic PAH List, Soil Residential | NA | | 1 | $75.00 | $75.00 |
| CPAH_IDEM_ | Aqueous | Carcinogenic PAH List, Water Comm/In | NA | | 1 | $75.00 | $75.00 |
| CPAH_IDEM_ | Aqueous | Carcinogenic PAH List, Water Resident | NA | | 1 | $90.00 | $90.00 |
| PAH_IDEM_S | Soil | Full PAH List, Soil Residential | NA | | 1 | $75.00 | $75.00 |
| PAH_IDEM_S_ | Soil | Full PAH List, Soil, Comm/Ind | NA | | 1 | $75.00 | $75.00 |
| PAH_IDEM_W | Aqueous | Full PAH List, Water, Comm/Ind | NA | | 1 | $75.00 | $75.00 |
| PAH_IDEM_W | Aqueous | Full PAH List, Water, Residential | NA | | 1 | $90.00 | $90.00 |
| IN UST METAL | Soil | Indiana UST Metals, Soil | NA | | 1 | $59.00 | $59.00 |
| IN UST METAL | Aqueous | Indiana UST Metals, Water | NA | | 1 | $59.00 | $59.00 |
| TPH_GRO_W_ | Aqueous | Gasoline Range Organics, Comm/Ind | SW8015A-mod | | 1 | $30.00 | $30.00 |
| TPH_GRO_W_ | Aqueous | Gasoline Range Organics, Residential | SW8015A-mod | | 1 | $30.00 | $30.00 |
| TPH_GRO_S_I | Soil | Gasoline Range Organics, Residential | SW8015A-mod | | 1 | $30.00 | $30.00 |
| TPH_ERO_W_ | Aqueous | Extended Range Organics, C10-C36 R | SW8015M | | 1 | $37.50 | $37.50 |
| TPH_ERO_S_I | Soil | Extended Range Organics, C10-C36 R | SW8015M | | 1 | $37.50 | $37.50 |
| BTEX_MTBE_ | Aqueous | Aromatic Volatile Organics | SW8021B | | 1 | $39.00 | $39.00 |
| BTEX_MTBE_ | Soil | Aromatic Volatile Organics | SW8021B | | 1 | $39.00 | $39.00 |
| VOC_S_IDEM | Soil | Volatile Organic Analysis, Comm/Ind | SW8260A | | 1 | $80.00 | $80.00 |
| VOC_S_IDEM | Soil | Volatile Organic Analysis, Residential | SW8260A | | 1 | $80.00 | $80.00 |
| VOC_W_IDEM | Aqueous | Volatile Organic Analysis, Comm/Ind | SW8260B | | 1 | $80.00 | $80.00 |
| VOC_W_IDEM | Aqueous | Volatile Organic Analysis, Residential | SW8260B | | 1 | $80.00 | $80.00 |
| SVOC_W_SIM | Water | Semivolatile Organics by SIM, Resident | SW8270C | | 1 | $25.00 | $25.00 |
| SVOC_S_IDE | Soil | Semivolatile Organics, Comm/Ind | SW8270C | | 1 | $143.50 | $143.50 |
| SVOC_W_IDE | Water | Semivolatile Organics, Comm/Ind | SW8270C | | 1 | $143.50 | $143.50 |
| SVOC_W_IDE | Aqueous | Semivolatile Organics, Residential | SW8270C | | 1 | $143.50 | $143.50 |
| SVOC_S_IDE | Soil | Semivolatile Organics, Residential | SW8270C | | 1 | $143.50 | $143.50 |

| | | | |
|---|---|---|---|
| Company: | Hull & Associates, Inc. | | Submitted By: |
| Contact: | Doug Stuart | | Holly Green |
| Address: | 6330 E. 75th Street<br>Suite 176<br>Indianapolis, IN 46250 | | |
| Phone: | (317) 558-0558 | Fax: (317) 558-0553 | |

| | | | |
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| TAT: | 10 working days | | |
| QC Level: | LEVEL II | | |

| TEST ID | Matrix | Test Name | Test | Remarks | # Samp | Unit Price | Test Total |
|---|---|---|---|---|---|---|---|

Misc Comments:

| | |
|---|---|
| Sub total: | $2,093.50 |
| Misc: | $0.00 |
| Discount: | 0.00% |
| Surcharge: | 0.00% |
| **TOTAL:** | **$2,093.50** |

**Comments:** Includes all bottles, preservatives, and electronic data deliverables.